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ABSTRACT

Reported are the conclusions of a summer institute of special educators for the purpose of evaluating the appropriateness of the open-middle school for the exceptional child. The study is based on the ideas of architects Michael Bednar and David Haviland, who order exceptionalities along a continuum of intactness of the adaptive mechanism and describe environmental variables in terms of 15 basic environmental conceptualizations such as consistency, privacy, articulation among spaces, movement, and acoustical settings. Presented in chart form by severity of impairment are the intellectual, physical, social/emotional, and vocational characteristics of 10 to 14-year-old handicapped children. A mini-matrix examines the relationship between the program factor of flexibility with the 15 environmental conceptualizations. An observation check sheet is suggested as a means of evaluating whether basic environmental factors conducive to learning for exceptional children exist within a given school. Among the conclusions of the institute participants are the importance of the basic environmental conceptualizations in the effective open middle school and the need for caution in the inclusion of deaf, socially maladjusted, and emotionally disturbed children in the open middle school. (DB)

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The Exceptional Child In The Open Middle School

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CONTRIBUTORS

MARGARET AMO, Coordinator, EMR, Tampa, Forida

BETTY BLACK, Teacher, EMR, Ft. Pierce, Florida

BETTY CHERRY, Coordinator, Exceptional Child Program, Bradenton, Florida

ROBERT CONNERS, Consultant, EMR, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

ELREA M. DANIELS, Teacher, EMR, Marianna, Florida

DONALD H. DAVIS, Teacher, EMR, Largo, Florida

W. S. DAVIS, Principal, Florida School for the Deaf and the Blind, St. Augustine, Florida

MARY L. FAGAN, Teacher, EMR, Marianna, Florida

HAZEL HARGROVE, Consultant, VH, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

TOMMY HAYES, Teacher, EMR, Eustis, Florida

MARY E. JENSEN, Teacher, EMR, Okeechobee, Florida

LOIS LUNSFORD, Teacher, EMR, Tavares, Florida

MARILYN MIZELL, Coordinator, Exceptional Child Program, Arcadia, Florida

KENNETH PRICE, Jacksonville, Florida

CAROL SELL, Supervisor, EMR Program, Orlando, Florida

EDWARD SMALLWOOD, Teacher, EMR, Ocala, Florida

DR. LANDIS STETLER, Administrator, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

ANNETTE WALKER, Teacher, EMR, Avon Park, Florida

MURL WESTMORELAND, Teacher, EMR, High Springs, Florida

DONALD WINNINGHAM, Coordinator, Exceptional Child Education, Key West, Florida

KAREN YOUNGBLOOD, Director, Special Education and Related Services, Ft. Myers, Florida

ARCHITECTS

DAVID EPPERSON, AIA, Architectural Facilities Planning, Department of Education, Tallahassee, Florida

EOGHAM KELLEY, AIA, Winter Park, Florida

WILLIAM MORGAN, AIA, Jacksonville, Florida

TED PINARD, ARA, Architectural Facilities Planning, Department of Education, Tallahassee, Florida

CONSULTANTS

EVELYN B. ADAMS, Teacher, EMR, East Naples Middle School, Naples, Florida

DR. MARY COMPTON, Associate Professor, University of Georgia, Athens, Georgia

DR. CARY CHURCH, Director, Pupil Personnel, Naples, Florida

ELEANOR GEUTZLOE, Associate Professor, University of South Florida, Tampa, Florida

ROGER HUFF, American Printing House for the Blind, Louisville, Ky.

HARRY PELLEY, Educational Facilities Planning, Department of Education, Tallahassee, Florida

ROBERT WEHKING, Educational Facilities Planning, Department of Education, Tallahassee, Florida

DR. PEARLINE YEATTS, Associate Professor, University of Georgia, Athens, Georgia

GROUP LEADERS

FOSTER BOYD, Consultant, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

DR. SARA CONLON, Consultant, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

ROBERT BLACK, Director, Programs for Exceptional Children, Ft. Pierce, Florida

JOAN GESSLEIN, Director, Special Services, Marianna, Florida

DR. IONE PERRY, Consultant, Florida Department of Education, Tallahassee, Florida

EDITOR

LOUISE C. FAHRNEY, Consultant, Exceptional Child Education, Florida Department of Education, Tallahassee, Florida

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THE EXCEPTIONAL CHILD IN THE OPEN MIDDLE SCHOOL

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FOREWORD

The following paper, The Exceptional Child in the Open-Middle School, came into existence through several stages. A few years ago as team teaching emerged, one of the spin-offs was the recognition of the necessity for the flexibility of space. More recent in development, the middle school philosophy, or concern for pre and early adolescents, brought into view the mandate for flexibility of space, staff and program.

As so often happens, the material representation of the educational point of view developed faster than the understanding of the underlying concept. Many variants of the "open," "open-middle" and "middle" school were built. Alarmed by the rapidity of facilities outrunning philosophy and aware that sooner than not, these buildings would encompass exceptional children, we decided to move.

A review of the literature gleaned little, other than the paper by Bednar and Haviland. Clearly then the responsibility became ours, that of putting perimeters around infinity.

As a start, respected colleagues were invited to a summer institute. Upon acceptance, they received homework packets for perusal and action. One of the assignments was to take the work sheets using the Basic Environmental Conceptualizations and check them against any open, middle, or open-middle school within reasonable geographic distance. When these were returned, prior to the Institute, two factors were emergent:

A. These Conceptualizations were significant from a psycho-educational point of view for all children

B. Few, scattered, or none of these conceptualizations were found existent within the schools visited.

The participants arrived, with notes, views, questions, and challenges and were off to semantic warfare. The brief week left everyone limp, exhilerated, feeling that something great had occurred but frustrated because they had not reached closure.

The Special Study Institute was funded through a grant to the Florida Department of Education from the Bureau of Education for the Handicapped, USOE, under Title VI-D. Following the Institute, this material was organized and extended to its present level. The measure of its worth will be determined when others find value in the material and take it to yet another stage of development.

It is my privilege to express appreciation to all of the people who contributed to this publication, and especially to Louise Fahrney who served both as director of the Institute and editor of this manuscript.

Floyd T. Christian
Commissioner of Education

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CHAPTER I — RATIONALE

The "middle school" concept has come into existence as a result of concern among general educators about a particularly fragile and vulnerable period of time between childhood and adolescence (chronologically between ages ten and fourteen) and the significance between this growth phase and the educational scene.

The factors critical to making the "middle school" a different experience from junior high are the flexibilities of spatial configurations (or openness), staff and program. These three, theoretically, would bring close together the child's abilities and needs with the educational input.

As educators became involved in the exploration of the 'middle school" concept, more emphasis seemed to be placed on the "openness" of space rather than the connotation of flexibility of manipulation of the physical environment as part of the instructional technique. In many instances "openness" or lack of walls became as rigid as were the fixed walls in the more traditional type of school building.

Completely dropped from many an educational discussion were the other two critical factors for the middle school's being an appropriate learning environment for the youngsters between 10-14 years. These are, of course, flexible program and flexible staff.

As special educators, we are doubly concerned about the ten to fourteen year olds. We heartily agree that the pre- and early-adolescent is adjusting to all kinds of growth pressures (physically, emotionally, intellectually). If, in addition to these he is blind, partially-sighted, deaf or hard of hearing, has behavior disorders or learning disabilities, he is experiencing additional immeasurable pressures.

How appropriate, then, the middle school (flexible program, staff, space) might be for exceptional children can only begin to be determined by special educators seeking answers to such questions as:

(1) What are the characteristics of the ten to fourteen year old physically, intellectually, emotionally?

(2) What additional different characteristics does the ten to fourteen year old have if he is blind, partially sighted, deaf, hard of hearing, socially or emotionally maladjusted or learning disabled?

(3) Should there be a fourth, or vocational, category of characteristics for consideration?

(4) Are the characteristics of the transescent[1] exceptional child so unique: that he cannot tolerate the middle school; or, that with certain modifications to program, or staff, or space (any one or all of these) compensations could be made enabling the middle school to become supportative and conductive to his learning?

Special educators and architects were invited to attend an institute in Winter Park, Florida, from August 3-7, 1970, to discuss these questions, arrive at some conclusions and develop position papers.

It was anticipated that the participants could come to a delineation of program and staff needs for exceptional children in the middle school, but would experience semantic confusion when they began to deal with the space component.

Since there appears to be an accepted recognition by architects and educators of the difficulty in transferring an educational idealogy into an architectural reality, a usable catalyst was sought.

Ideas presented in a paper by two architects, Michael Bednar and David Haviland, offered an opportunity for such use by institute participants.

The very artistry of the architect enables him to build a physical environment so subtly that the individual rapidly adapts to it and is unable to conceptualize the impact there would be on him if his adaptive mechanisms were impaired. The adaptive mechanisms are inoperative or impaired for many exceptional children.

Therefore, if we consider the degree to which the exceptional child's perceptual, communicative, affective, and cognitive systems are affected by his particular exceptionality, we can place him along a continuum of intactness of the adaptive mechanisms. The existence of his handicapping condition has created learning disabilities in one or more of these systems, thus causing him to fall to the left of the midpoint, or somewhere along the negative side of the continuum.

The exceptional child, due to the non-intactness of these systems, is unable to exploit the physical environment's function as part of the total learning environment. Instead, the child can be exploited by the physical environment. The environmental stimuli are perceived very directly and consequently produce strong concommitant behavior.

[1]Donald H. Eichhorn's terms for pre- and early adolescent: trans = to go across; escent = to become something.

Bednar and Haviland (see Figure 3.1) suggest that all the exceptionalities, excluding the gifted, can be ordered along the continuum of intactness of the adaptive mechanism and would possibly fall within one of three clusters. Those falling within the more severely involved group, farthest away from the midpoint, should cause architects and educators the most provocative thinking.[1]

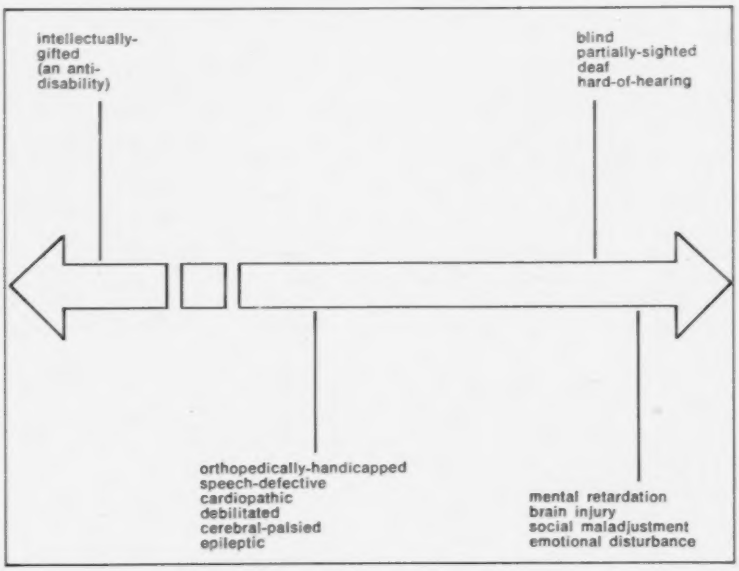
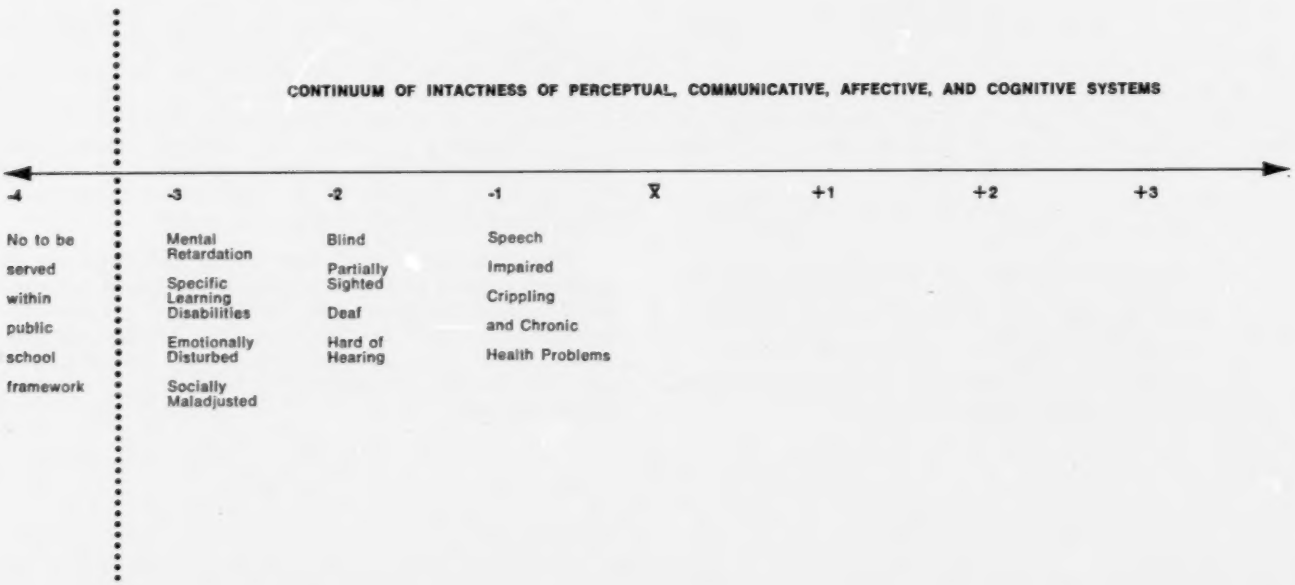


Figure 3.1

The Bednar-Haviland concept elicited exciting possibilities but seemed more workable for the writer's purpose if reordered in this fashion:



[1]Michael J. Bednar and David S. Haviland, *The Role of the Physical Environment in the Education of Children With Learning Disabilities*, p. 17.

The Bednar-Haviland contention is that if educators and architects could come up with descriptors of the physical, or built environment appropriate for children in this extreme clustering (from here on called -3 category) they would have provided descriptors of physical environment for the remaining two groups (-2 and -1).

Bednar and Haviland define physical environment as architectural or built environment consisting of **things** (building materials, furniture, plumbing, etc.) and **conditions** (environmental variables: light, color, shape, texture, acoustics, and others) which make up space and buildings for human habitation. They see the physical environment as a catalytic agent in the learning situation capable of fostering interpersonal relationships, suggesting and stimulating behavior. Therefore, through consciously manipulating the environmental stimuli, behaviors can be changed and the development of the adaptive mechanism can be facilitated.[1]

Bednar and Haviland saw significant relationships between the degree of intactness of the adjustive mechanisms (-3, -2, -1) and "conditions" or environmental variables such as light, color, shape, texture, acoustics, etc. To this point, they extended these conditions to what they called "Basic Environmental Conceptualizations."[2]

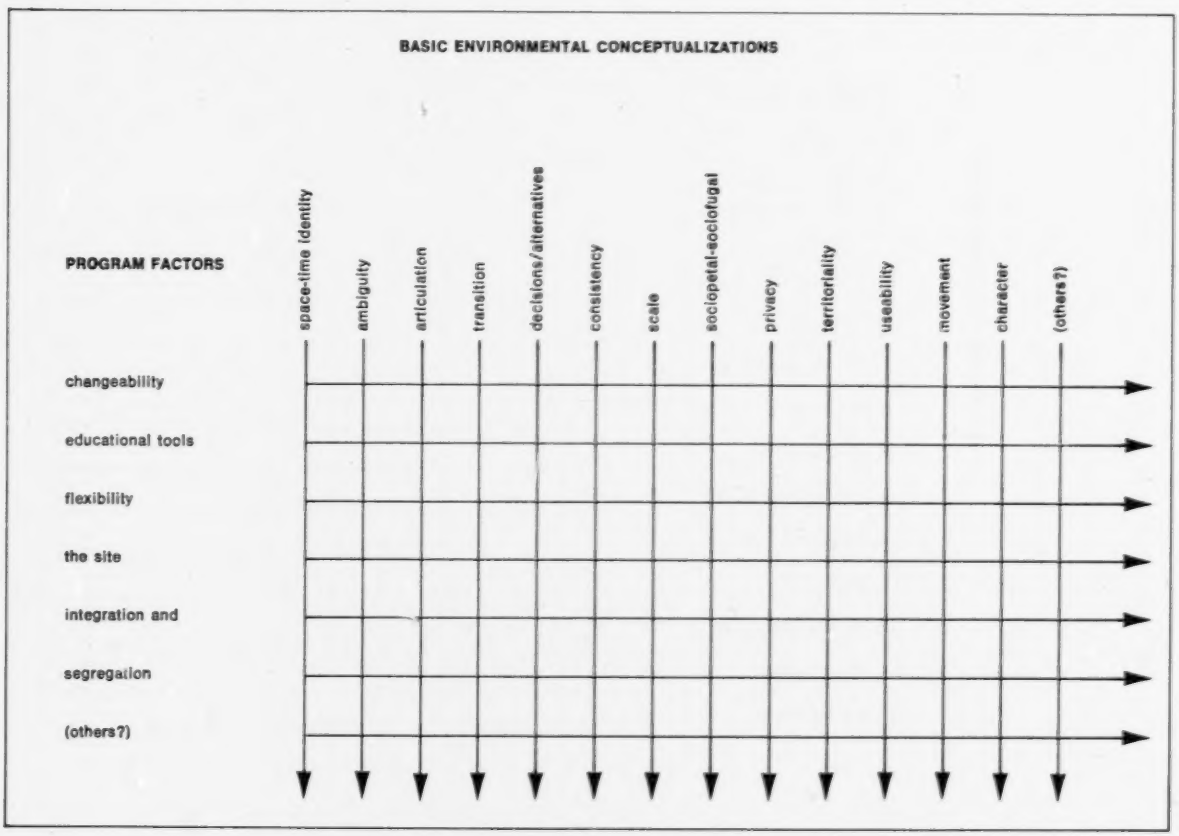
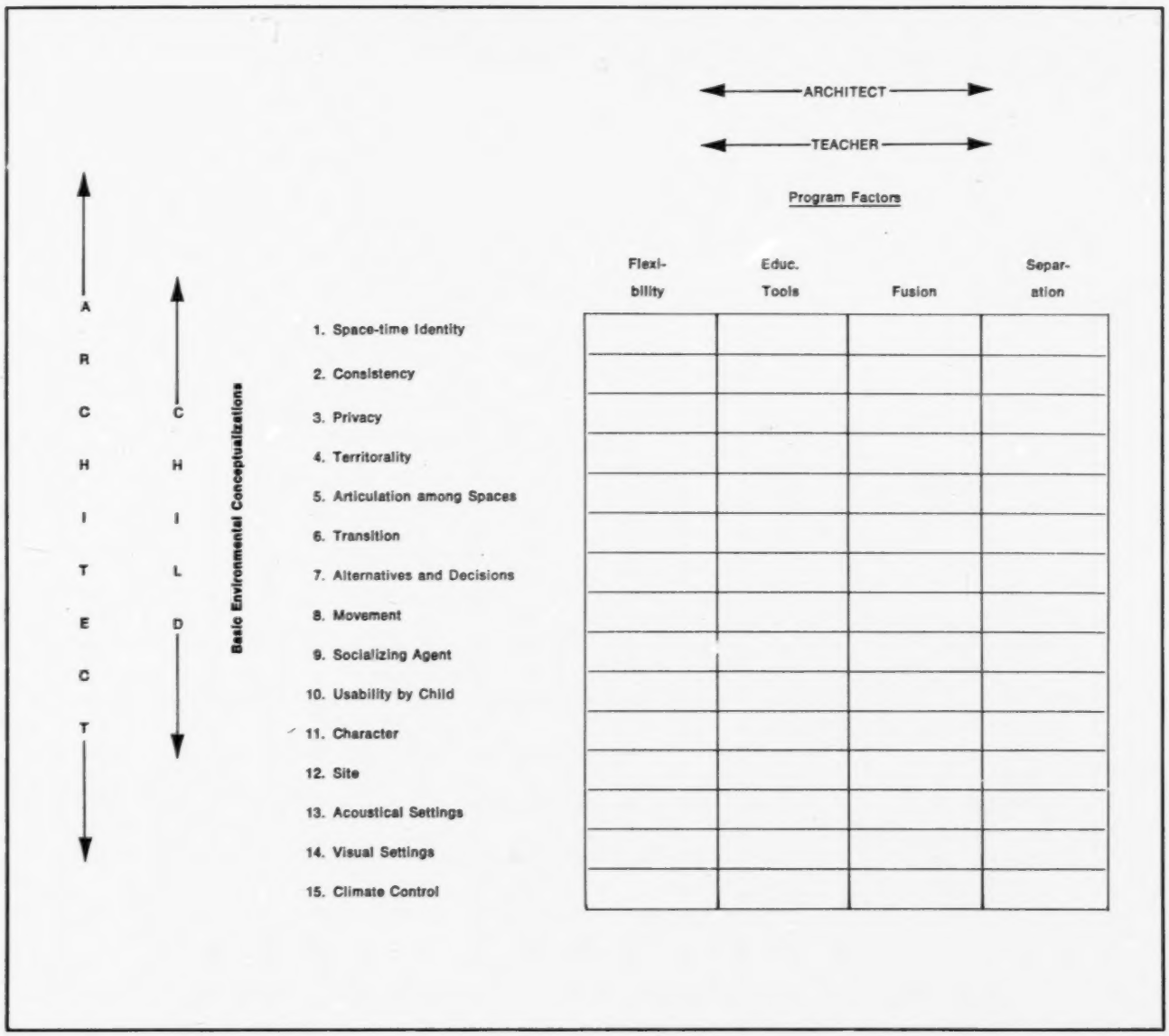


Figure 8.1—Program Factors: "Superimposed" on the Basic Environmental Conceptualizations for Special Education[3]

1. Michael J. Bednar and David S. Haviland. *The Role of Physical Environment in the Education of Children With Learning Disabilities*, p. 3.
2. *Ibid.*, p. 53
3. *Ibid.*, p. 72.

From an educator's point of view, the architect's role is two-fold in designing a physical environment which creates a learning environment. He must first build in direct manipulators (Basic Environmental Conceptualizations) of the people therein, both instructors and learners. Then he must "stage" or build in secondary manipulators (Program Factors) which permit the instructor certain flexibilities to modify the learning environment.

For this reason, this writer (an educator) took the liberty of reorganizing Bednar and Haviland's (architects) matrix to look like this:



The desirable catalytic agent, as mentioned earlier, to enable educators and architects realistically to discuss the flexibility of space in the middle school came from these three big ideas as offered by Bednar and Haviland:

- of ordering the exceptionalities along the negative side of the continuum of intactness of the adjustive mechanism (composed of perceptual, communicative, affective and cognitive systems);
- of enlarging upon the "conditions" or environmental variables of architectural environment to "basic environmental conceptualizations";
- of comparatively examining "a" and "b" for determinants of physical environment for exceptional children.

The participants were requested to examine the categories of exceptionalities as done by Bednar and Haviland and make any redistributions they agreed upon as necessary. Then as assigned members to one of the three negative groupings representing the exceptional children therein, they proceeded to arrive at some baseline agreements in response to these specific questions:

1. What are the intellectual, physical, emotional and vocational characteristics and needs of the child between 10 and 14 years of age?

2. What additional characteristics and needs, (intellectually, physically, emotionally and vocationally) might a child from 10-14 have resulting from his exceptionality?

3. What is meant by the open-middle school with components of flexible **program, staff,** and **space?**

4. What vehicle can be used to determine the relationships between the exceptional child's input systems and the physical (or built) environment?

5. What are the tolerances of exceptional children for flexible space, staff and program?

6. Does the concept of the open-middle school as an optimal learning environment for the pre-adolescent hold true for the exceptional pre-adolescent?

7. Is there a need for a position paper or papers concerning the placement of exceptional children in the open-middle school?

A large fold-out chart in the form of the matrix was given as a worksheet. Across the top were listed the program factors over which the teacher should have control, i.e., flexibility (of spatial configurations, lighting, acoustics), educational tools (soft and hardware), and fusion or separation of the exceptional students. Along the right side of the chart were listed the basic environmental conceptualizations (the components of the **built** environment).

Using as counterpoint entry information the core of material agreed upon in answer to the previously listed seven questions, the groups reflected, debated, reflected.

The general consensus of opinion was that the Basic Environmental Conceptualizations were important for all children whether in traditional or "open" school design. Also agreed upon was that they made the critical difference in making the open middle school a learning environment because of that design's emphasis on flexibility.

The teacher's use of educational tools, the second of the Program Factors, as viewed against the Basic Environmental Conceptualizations seemed to provide less threat to the learning environment. For, if the Basic Environmental Conceptualizations were existent within the built, or physical environment, they would exert a certain amount of control over the teacher in enabling her to create a learning environment. The remainder of control deemed necessary to avoid ambiguities, would, hopefully, come from within the teacher's training or from supervisory help.

The final Program Factors (fusion with the non-exceptional or separation from them), when treated in the same manner as flexibility, fell into two subconsiderations. The first of these is **building design** and the second is **programming and scheduling** exceptional children within the open middle school organization for which the special education teacher provides leadership.

Returning to the most critical of relationships, that between the Program Factor "flexibility" and the Basic Environmental Conceptualizations, the participants worked at length. After defining each conceptualization, the problems and proposals were listed.

Although strong feelings were expressed in support of all the conceptualizations, some were more difficult with which to deal. Participants found it difficult to cue-reduce through the subtleties of architectural creativity and their own teaching experiences to the degree that all problems they felt existed could be identified. In many instances, when problems could be identified, suggestions as how to "overcome" were unobtainable. The decision was made to include in the report the work accomplished, although incomplete, to provide a baseline of departure for additional development.

At this point, recommendations were made to develop an observation check sheet from the material gathered, run a pilot study to clean up this instrument, then have a team use it in as many open schools as possible. The data thus gathered could lead to resource information:

- for future completion of the document on the relationships between Program Factor flexibility and the Basic Environmental Conceptualizations;

- and to the subsequent realization of the objective for educational specifications pertinent to the transescent exceptional child in the "open" school.

CHAPTER II — CHARACTERISTICS OF PRE AND EARLY ADOLESCENTS

Educational programs must reflect the characteristics of the youngsters involved. Therefore, we identified the major characteristics of the 10-14 year old: intellectually, physically, emotionally/socially, and vocationally. For our purposes of comparison of these major characteristics as they pertain to the non-handicapped and the handicapped child, we considered a hypothetical Mean ($\bar{X}$) on the Continuum of Intactness of the Adaptive Mechanisms. The non-handicapped would show up somewhere along the right, or positive side of the mean in Positive Groups I, II, III, or IV. The handicapped would fall into Groups I, II, III, or IV along the negative side of the Mean ($\bar{X}$) according to severity of condition, with Negative Group IV being that group of children so handicapped for one reason or another that an educational environment would not be appropriate for them.

Procedure Followed:

1. An examination of the Characteristics of the 10-14 year old:

   — Intellectually:

   growth of capacities

   growth of skills

   noticeable change

   developing

   — Physically:

   vision

   hearing

   — Socially/Emotionally

   — Vocationally

2. These characteristics listed under the title "Non-Handicapped."

3. The listing of additional characteristics of the child relevant to his handicapping condition:

   — Negative Group I:

   speech impaired

   crippling and chronic health conditions

   — Negative Group II:

   blind

   partially sighted

deaf

hard of hearing

– Negative Group III

mental retardation (educable)

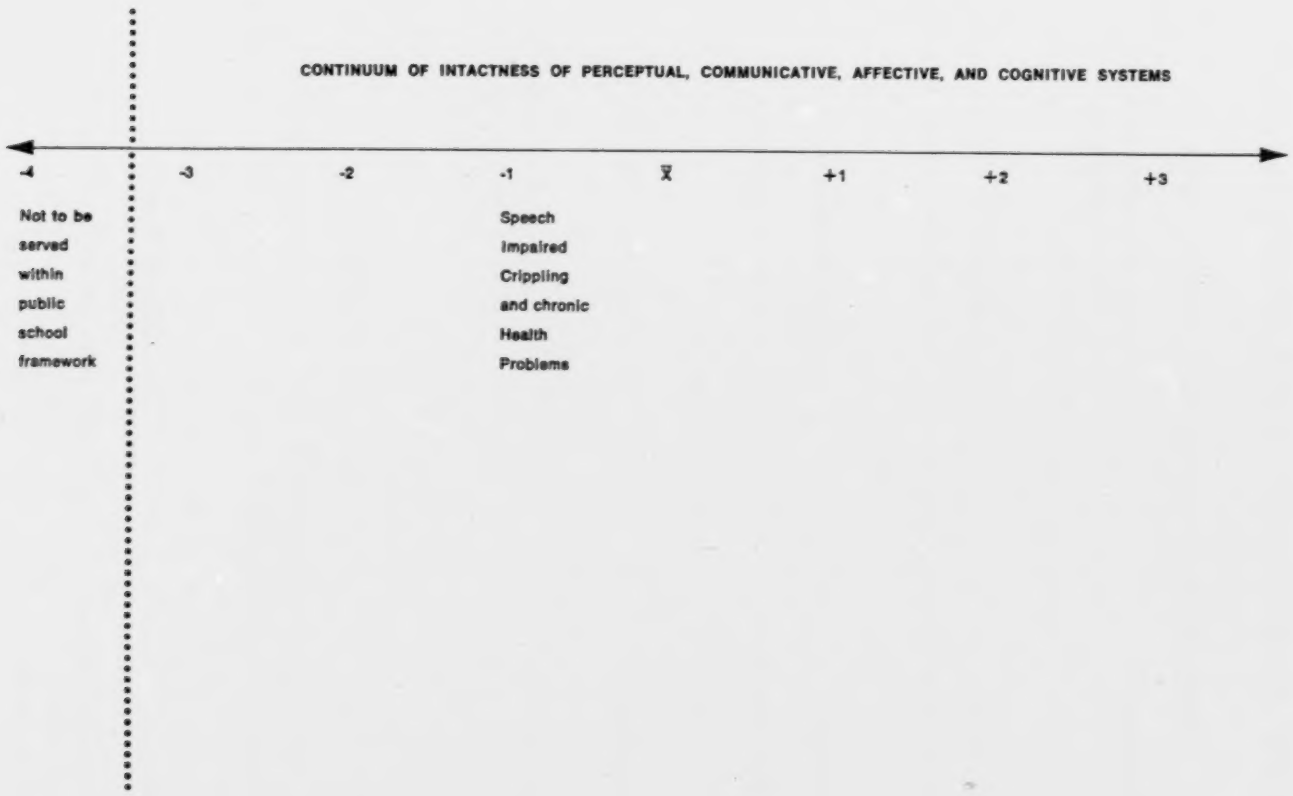
specific learning disabilities

emotionally disturbed

socially maladjusted

4. A comparison made between each exceptional child negative grouping and the non-handicapped.

In the following pages we are concentrating on the pre and early adolescent at the **Negative I, (-1) Position** on the Continuum of the Adaptive Mechanisms.



CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP I	
	SPEECH IMPAIRED	**CRIPPLED AND CHRONIC HEALTH IMPAIRED**
I. INTELLECTUALLY	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**
(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)
Growth of Capacities	**Growth of Capacities**	**Growth of Capacities**
— moving from a stage of concrete operations in which the cognitive processes center on the tangible	— no significant difference	— no significant difference
— increasing capacity to deal with the abstract	— no significant difference	— no significant difference
— increased ability to organize knowledge into meaningful units, to synthesize, and to make generalizations from data	— no significant difference	— lack of vitality or alertness may decrease ability to attend to problem, hence affecting rate of development
Growth of Skills	**Growth of Skills**	**Growth of Skills**
— developing fundamental skills in reading, writing, and calculating	— may be having difficulty in developing fundamental skills in reading, writing and calculating	— may be having difficulty in developing fundamental skills in reading, writing and calculating
Noticeable Change	**Noticeable Change**	**Noticeable Change**
— in motivation, attitudes, and horizons	— in motivation, attitudes, horizons will be in relation to success experienced in alleviation of speech defect	— motivation, attitudes, and horizons will be in relationship to vitality and self-acceptance

Developing

— concepts necessary for everyday living

— conscience, morality, and a scale of values

— attitudes toward social groups

II. PHYSICALLY

— rapid growth and body changes

— all sizes

— high energy peaks followed by exhaustion

— tremendous food intake

— motor skills in general (walking, running, jumping, etc.) continue to improve

— learning physical skills necessary for ordinary games

— athletic skills in particular continue to improve

Developing

— no significant difference

— no significant difference

— attitudes toward social groups in relation to success experienced in alleviation of speech defect

II. PHYSICALLY

— resembles his peer group in all of this phase

Developing

— no significant difference

— no significant difference

— will be in agreement to the degree of acceptance found among peer groups

II. PHYSICALLY

— dependent upon his condition

— all sizes

— energy level less than that of peers

— may have muscular or neuromuscular handicaps which limit their ability to move around, sit in the classroom, or manipulate the materials required for learning

— may be limited

— may have skeletal deformities which affect ambulation, posture, and hand use in school use

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP I	
	SPEECH IMPAIRED	**CRIPPLED AND CHRONIC HEALTH IMPAIRED**
II. PHYSICALLY	**II. PHYSICALLY**	**II. PHYSICALLY**
— boys find motor and athletic skills are prestigious	— resembles his peer group	— may have disabilities which result in reduced efficiency in school work because of temporary or chronic lack of strength, vitality, or alertness (Dunn 1963)
— coordination continues to improve through adolescence without any dips or regressions in the curve	— resembles his peer group	— may experience dips or regressions in coordination growth curve
Vision	**Vision**	**Vision**
— visual acuity continues to improve to late elementary or junior high age	— no significant difference	— may have visual problem
— good fusion (fusing of images from both eyes) reaches 80% of growth by 8th grade	— no significant difference	— may have visual problem
— good stereopses (depth perception) increases to 75 or 85% in late elementary years	— no significant difference	— may have visual problem

III. EMOTIONALLY/SOCIALLY

— becoming peer-oriented for similar security and:

a. needs to learn to get along with age-mates

b. needs to learn an appropriate sex role

— enthusiasms often outrun his knowledge and judgment

— has to cope with the persisting overlapping situations of transitional status as a child-adult

— is idealistic

— flights of ambition not always related to reality

III. EMOTIONALLY/SOCIALLY

— becoming peer-oriented for similar security and:

— resembles his peer group

— resembles his peer group

— resembles his peer group

— frequently caught in the doubly overlapping situations of transitional status as a child-adult and being handicapped

— resembles his peer group

— resembles his peer group

III. EMOTIONALLY/SOCIALLY

— may experience difficulty in making and retaining friends within his peer group

— needs to learn to get along with age-mates

— resembles his peer group

— resembles his peer group

— frequently caught in the doubly overlapping situations of transitional status as a child-adult and being physically handicapped

— resembles his peer group

— resembles his peer group

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP I	
	SPEECH IMPAIRED	**CRIPPLED AND CHRONIC HEALTH IMPAIRED**
Hearing	**Hearing**	**Hearing**
— reaches a peak of acuity around age thirteen	—may have a hearing loss	—may have a hearing loss
III. EMOTIONALLY/SOCIALLY	**III. EMOTIONALLY/SOCIALLY**	**III. EMOTIONALLY/SOCIALLY**
— generally experiences some embarrassment due to body changes, especially if sudden body changes affect the adolescent's body image and self-concept	— self-conscious about speech defect	— may or may not have an emotional problem resulting from physical condition
— appearance of awkwardness (social phenomenon): the early adolescent is unsure of himself and others, is embarrassed easily, and thus appears clumsy and poorly coordinated (Kuhlen 1952)	— impaired self-confidence	— impaired self-confidence
— needs to build wholesome attitudes toward self as a growing mechanism	— still working on the distinction between his speech defect being a behavior about which he can do something and a biological factor of what he is and cannot remedy	— needs to accept himself as he is
— moving from dependence on parents for attitudes and values	— reacts to the view of himself expressed by the listener as being the way he is, i.e., mentally retarded, hesitant, delayed in social adjustment, inadequate	— could be delayed

IV. VOCATIONALLY

— ambition related to ability as each sees it

— changeable, related to transitory heroes

— relating indirectly to the world of work through:

a. ability to undertake cooperative enterprises

b. choice of activities suited to one's abilities

c. assumption of responsibilities for one's acts

d. performance of chores around the house and school

IV. VOCATIONALLY

— needs to learn to view his assets and limitations realistically

— resembles his peer group

— the factors of impaired speech which can be changed or eliminated need to be so done

— relating indirectly to the world of work through:

— no significant difference from peers in ability to undertake cooperative enterprises

— needs to learn to strive for attainable goals

— no significant difference from his peers in ability to assume self-responsibility

— no significant difference from peers in performance of chores around the house and school

IV. VOCATIONALLY

— needs to learn to view his assets and limitations realistically

— resembles his peer group

— relating indirectly to the world of work through:

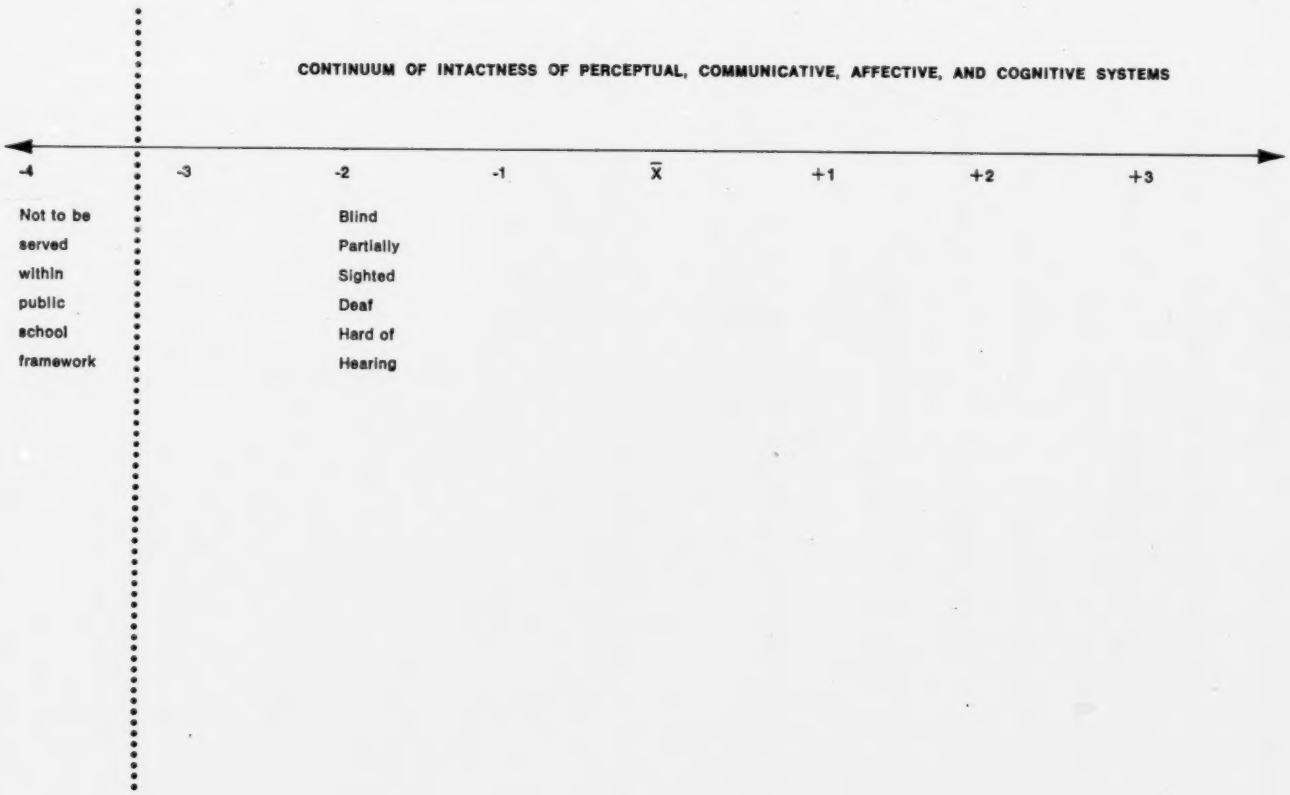
— no significant difference from peers in ability to undertake cooperative enterprises

— needs to learn to strive for attainable goals

— no significant difference from his peers in ability to assume self-responsibility

— within limitations imposed by physical condition can perform chores around the house and school

In the following pages we are concentrating on the pre and early adolescent at the **Negative 2, (-2) Position** on the Continuum of the Adaptive Mechanisms.



CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP II			
	BLIND	**PARTIALLY SIGHTED**	**DEAF**	**HARD OF HEARING**
I. INTELLECTUALLY	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**
Growth of Capacities	**Growth of Capacities**	**Growth of Capacities**	**Growth of Capacities**	**Growth of Capacities**
— moving from a stage of concrete operations in which the cognitive processes center on the tangible	— experiencing difficulties in concept formation because of slowly developing perceptual system	— has some difficulty in moving from concrete to abstract	— actual intelligence may be normal or above, but test scores will usually be low because of language barrier	— may experience some difficulties in concept information
— increasing capacity to deal with the abstract	— slowly developing perceptual system since child is dependent upon tactile and auditory senses of information	— may also have perceptual loss	— has marked language problem because of dependence upon visual and tactual avenues to language learning	— could experience mild language problem, dependent upon age of onset, type of loss, time of initial use of hearing aid, adequacy of compensation provided
— increased ability to organize knowledge into meaningful units, to synthesize, and to make generalizations from date	— is learning to compensate for disorientation problems	— will be affected to extent of perceptual loss	— rate of moving from a stage of concrete operations to cognitive processes is dependent upon the degree of inner and receptive language child has (which in turn, is related to age at onset of deafness)	— may encounter higher expectancy by teacher of his rate of moving from a stage of concrete operations to cognitive processes than his actual rate of development. A coralate of child's being caught more in the overlapping world of the hearing

Growth of Skills	Growth of Skills	Growth of Skills	Growth of Skills	Growth of Skills
— developing fundamental skills in reading, writing, and calculating	— just beginning to develop reading comprehension, similar to that of the sighted average third grade child, using Braille symbols	— is 2½ years academically retarded	— the profoundly deaf child experiences a growth spurt between ages 9-15 and also seems to reach a plateau during that period	— understands conversational speech at a distance of 3-5 feet (face to face). May miss as much as 50% of class discussions if voices are faint or not in line of vision (30 to 55dB ISO)
	— usually has academic weakness in science, social studies and language	— usually has academic weakness in science, social studies and language	— has had to match what the sounds look like on speaker's face to the printed word form	— reading vocabulary development and subsequent reading comprehension may be affected to the extent of hearing loss in the speech frequencies and the degree of comprehension rendered by hearing aid
	— highest achievement is in arithmetic computation	— highest achievement is in arithmetic computation	— has a reading vocabulary of an average second to third grade child; inconsistencies of English language further augment a reading delay for hearing impaired children	— will need assistance in vocabulary development and reading (30 to 55dB ISO)
				— conversation must be loud to be understood. Will have increased difficulty in group discussion (56 to 70dB ISO)
	— accuracy and speed in typing is improving		— development of fundamental skills in writing dependent upon his ability to read	— is likely to be deficient in language usage and comprehension (56 to 70dB ISO)
	— is developing a combination of learning approaches which involve listening materials, tactual apparatus, reading and the use of the hardware that is necessary in such a study system			— will have limited vocabulary

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP II			
	BLIND	**PARTIALLY SIGHTED**	**DEAF**	**HARD OF HEARING**
I. INTELLECTUALLY	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**
Noticeable Change	**Noticeable Change**	**Noticeable Change**	**Noticeable Change**	**Noticeable Change**
— in motivation, attitudes and horizons	— may be developing unrealistic hopes that must be carefully evaluated	— no significant difference from his peer group	— may be developing unrealistic hopes that must be carefully evaluated	— no significant difference from his peer group
Developing	**Developing**	**Developing**	**Developing**	**Developing**
— concepts necessary for everyday living	— no significant difference from his peer group	— no significant difference from his peer group	— no significant difference from his peer group	— no significant difference from his peer group
— conscience, morality and scale of values	— probably stereotypes of parents	— no significant difference from his peer group	— no significant difference from his peer group	— no significant difference from his peer group
II. PHYSICALLY	**II. PHYSICALLY**	**II. PHYSICALLY**	**II. PHYSICALLY**	**II. PHYSICALLY**
— rapid growth and body changes	— no significant difference in growth factors	— no significant difference in growth factors	— no significant difference in growth factors	— no significant difference in growth factors
— all sizes	— all sizes	— all sizes	— resembles peer group	— resembles peer group
— high energy peaks followed by exhaustion	— more energy expended in getting around	— resembles peer group	— resembles peer group	— resembles peer group
— tremendous food intake	— food intake limited because of embarrassment of eating — restriction of variety	— resembles peer group	— resembles peer group	— resembles peer group

— motor skills in general (walking, running, swimming, jumping, throwing, etc.) continue to improve	— needs opportunities to improve motor skills in general (walking, swimming, running, jumping, throwing, etc.)	— needs opportunities to improve motor skills in general (walking, swimming, running, jumping, throwing, etc.)	— motor skills in general (walking, running, jumping, throwing, etc.) continue to improve	— motor skills in general (walking, running, jumping, throwing, etc.) continue to improve
— learning physical skills necessary for ordinary games	— no significant difference but degree of participation may be limited	— no significant difference but degree of participation may be limited	— often excellent dancer — good eye-hand coordination	— may experience difficulties in learning physical skills necessary for ordinary games, if instructor fails to make directions understandable
— athletic skills in particular continue to improve	— needs to practice mobility; athletic skills in particular can continue to improve if modification of sport is made	— athletic skills can continue to improve if modification of sport or activity is made	— student often stars in games, sports which do not require integration of directions	
— boys find motor and athletic skills are prestigeful	— no significant difference but degree of participation may be limited	— no significant difference but degree of participation may be limited	— no significant difference but degree of participation may be limited	— no significant difference from his peers
— coordination continues to improve through adolescence without any dips or regressions in the curve	— some uncoordination but more postural problems due to protective gait and mobility	— some uncoordination if perceptual problem exists	— can be well coordinated, especially if has had good training	— no significant difference from his peers
— visual acuity continues to improve to late elementary or junior high age	— divergent from his peer group	— divergent from his peer group	— no significant difference from his peers	— no significant difference from his peers
— good fusion (fusing of images from both eyes) reaches 80% of growth by 8th grade	— divergent from his peer group	— divergent from his peer group	— no significant difference from his peers	— no significant difference from his peers
— good stereopses (depth perception) increases to 75 or 85% in late elementary years	— divergent from his peer group	— divergent from his peer group	— no significant difference	— no significant difference
— hearing reaches a peak of acuity around age thirteen	— no significant difference	— no significant difference	— 70 deciBels and above I.S.O. hearing loss in the better unaided ear through the speech frequency range	— 30 deciBels-70 deciBels I.S.O. hearing loss in the unaided better ear through the speech frequency range

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

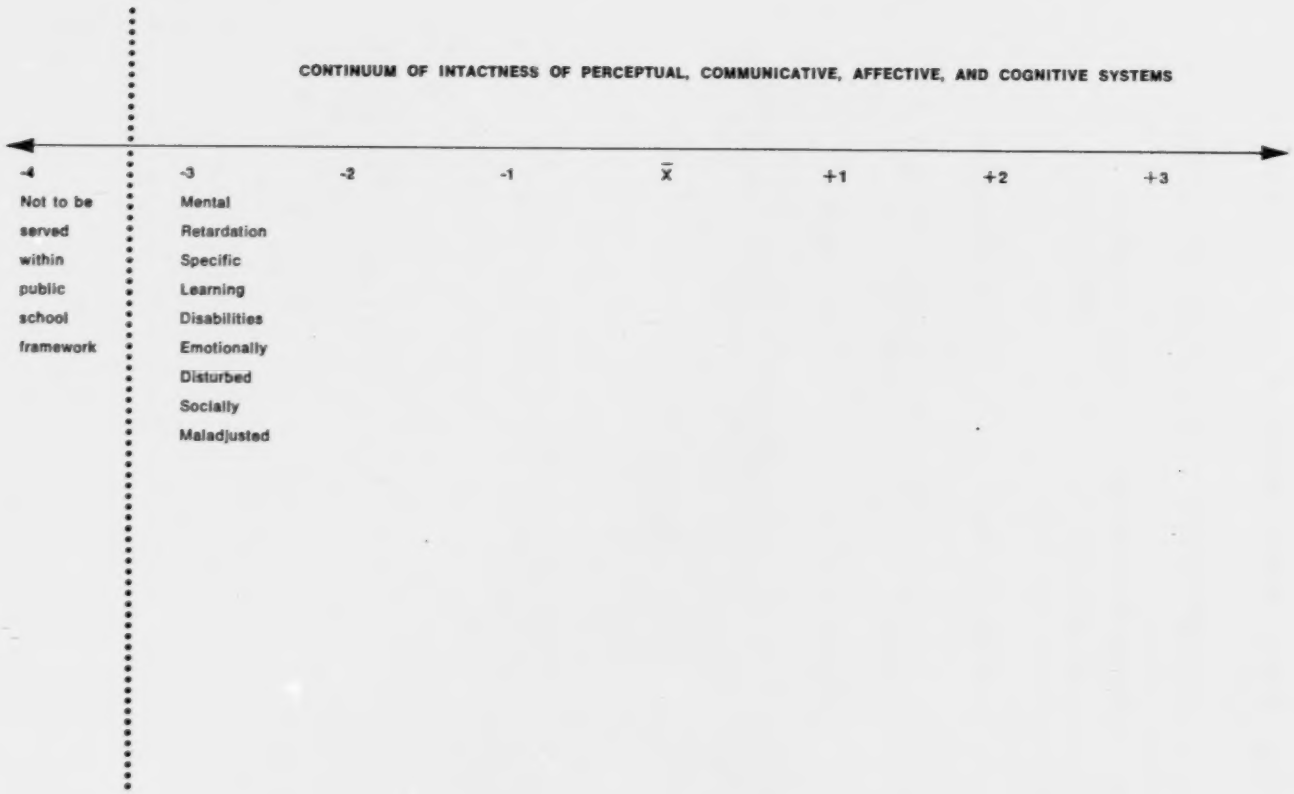
NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP II			
	BLIND	**PARTIALLY SIGHTED**	**DEAF**	**HARD OF HEARING**
III. EMOTIONALLY/ SOCIALLY	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**
— generally experiences some embarrassment due to body changes. Especially if sudden body changes affect the adolescent's body image and self-concept	— experiences more embarrassment and lack of visual comparison re body	— similar to peer group	— similar to peer group	— similar to peer group
— appearance of awkwardness (social phenomenon): the early adolescent is unsure of himself and others, is embarrassed easily, and thus appears clumsy and poorly coordinated (Kuhlen 1952)	— experiences overlapping situation wherein dependency upon parents as a blind child and wish to be with sighted peer group causes internal conflict	— similar to peer group	— similar to peer group	— similar to peer group
— needs to build wholesome attitudes toward self as a growing mechanism	— essential	— needs help in learning to view his visual limitations as only one of his attributes, not in maintaining it as the central focus of his life	— experiences distortion of self-concept. **Essential** that he receives help in building wholesome attitudes toward self as a growing mechanism	— needs help in learning to view his hearing limitation as only one of his attributes, not in maintaining it as the central focus of his life

— moving from dependence on parents for attitudes and values	— not yet moving from dependence upon parents	— moving from dependence on parents for attitudes and values	— not yet moving from dependence upon parents	— moving from dependence on parents for attitudes and values
— becoming peer-oriented for similar security and:	— experiencing difficulty in developing friendships	— becoming peer-oriented similarly to non-handicapped	— experiences some abandonment by peers	— experiences some abandonment by peer group
a. needs to learn to get along with age-mates	— experiences some abandonment by peers	— needs to learn to get along with age-mates	— needs to learn to get along with age-mates	— needs to learn to get along with age-mates
b. needs to learn an appropriate sex role	— tends to develop unrealistic hopes in boy-girl relationships with consequent frustrations	— needs to learn appropriate sex role	— needs to learn appropriate sex role	— needs to learn appropriate sex role
c. is developing new relations with age-mates of both sexes	— needs help in developing new relations with age-mates of both sexes	— needs help in developing new relations with age mates of both sexes	— needs help in developing new relations with age-mates of both sexes	— needs help in developing new relations with age-mates of both sexes
— is idealistic	— is idealistic	— is idealistic	— is idealistic	— is idealistic
— flights of ambition not always related to reality	— "shot down" by inability to see applicability of goals	— needs help in developing concepts meaningful to him within his own reality. Should not have artificial concepts imposed since he cannot understand or appreciate them	— needs help in developing concepts meaningful to him within his own reality. Should not have artificial concepts imposed since he cannot understand or appreciate them	— needs help in developing concepts meaningful to him within his own reality. Should not have artificial concepts imposed since he cannot understand or appreciate them
— enthusiasm often outrun his knowledge and judgment	— resembles his peer group	— resembles his peer group	— resembles his peer group	— resembles his peer group

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP II			
	BLIND	**PARTIALLY SIGHTED**	**DEAF**	**HARD OF HEARING**
III. EMOTIONALLY/ SOCIALLY	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**
— has to cope with the persisting overlapping situations of transitional status as a child-adult	— has to cope with the **doubly** persisting overlapping situations of transitional status as a child-adult and being blind	— may find adjustment problems more difficult than does blind child, since he is caught more in the overlapping world of the sighted	— has to cope with the **doubly** persisting overlapping situations of transitional status as a child-adult and being deaf	— may find adjustment problems more difficult than does deaf child, since he is caught more in the overlapping world of the hearing
IV. VOCATIONALLY	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**
— ambition related to ability as each sees it	— needs to learn to view his assets and limitations realistically	— needs to learn to view his assets and limitations realistically	— needs to learn to view his assets and limitations realistically	— needs to learn to view his assets and limitations realistically
— changeable, related to transistory heroes	— resembles peer group	— no significant difference	— resembles peer group	— resembles peer group
— relating indirectly to the world of work through	— essential that opportunities be provided to relate indirectly to the world of work as stated in "a, b, c, d" for non-handicapped	— same as for peer group	— essential that opportunities be provided to relate indirectly to the world of work as stated in "a, b, c, d" for the non-handicapped	— needs same opportunities to relate indirectly to the world of work as his peer group
a. ability to undertake co-operative enterprises		— needs to learn better uses of residual vision	— needs full-time special program for deaf children with emphasis on all language skills, concept development, lip-reading and speech	— needs lipreading instruction
b. choice of activities suited to one's abilities		— needs expectations of achievement in terms of his scholastic aptitudes and other attributes, not in terms of visual disability (Dunn 1963)	— needs specialized supervision and comprehensive supporting services	— may need speech conservation and correction (30dB to 70dB I.S.O.)
c. assumption of responsibilities for one's acts				
d. performance of chores around the house and school				

In the following pages we are concentrating on the pre and early adolescent at the **Negative 3, (-3) Position** on the Continuum of the Adaptive Mechanisms.



CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY RETARDED	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
I. INTELLECTUALLY	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**	**I. INTELLECTUALLY**
(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)	(ability to learn, to adapt, to solve problems)
Growth of Capacities	**Growth of Capacities**	**Growth of Capacities**	**Growth of Capacities**	**Growth of Capacities**
— moving from a concrete operational stage in which the cognitive processes center on the tangible	— concrete thinking persists. Requires more time for concept formation, has limited development of number and size concepts, has limited directionality concepts, perceptual difficulties	— experiencing disruption in this whole phase due to disabilities having some presumed neurological basis: hyperactivity perceptual-motor impairments disorders of attention disorders of memory and thinking	— may experience narrowing of perception due to anxiety stress	— direct and concrete. Uses little symbolic expression
— increasing capacity to deal with the abstract	— **delayed:** has difficulty with the associative process (responding to commands, solving verbal problems, organizing thoughts to tell a story, etc.)	— **disrupted:** has inability to integrate various types of information	— may experience disorganization of response patterns — may do less well in solving problems in which essential elements must be isolated from a particular context and recombined into a new relationship	— not methodical in approach to problems

Growth of Capacities (cont'd)

— increased ability to organize knowledge into meaningful units to synthesize, and to make generalizations from data

Growth of Capacities (cont'd)

— **delayed:** has difficulty in analyzing information and questioning it wisely

Growth of Capacities (cont'd)

— **disrupted**

Growth of Capacities (cont'd)

— may be "field dependent" (Witkin, 1962) or has a mode of perception in which the overall organization of the prevailing field is dominant, and parts of the field are experienced as fused with the background.

— If "field dependent," his perception of his body position is dictated by the surrounding field (he cannot keep his body separate from the surrounding room), then he may

visually: find it harder to break up the complex configuration and find the simple figure in it

or

auditorily: find it difficult to locate a set of notes in a complex melody

or

tactually: find it difficult to follow the contours of a simple design in a more complex one

or

experience some combination of these

Growth of Capacities (cont'd)

— **delayed:** has difficulty in analyzing information and in questioning it wisely

— does not see possible future, consequences of actions, "lives dangerously and if caught it is fate, or someone else's fault" the extent of his generalizations from data

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY RETARDED	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
Growth of Capacities (described on preceding page)	**Growth of Capacities** (described on preceding page)	**Growth of Capacities** (described on preceding page)	**Growth of Capacities (cont'd)** — may be "field independent" (Witkin, 1962) or has perception which shows an analytic quality, items are readily experienced as discrete from the field — if "field independent," shows a more articulated quality in his perceptual and intellectual functioning, also gives evidence of a more developed body concept. Experiences his body as having definite limits or boundaries and the parts within as discrete yet interrelated and formed in to a definite structure — if "field independent," may get "hung-up" by his perfectionistic tendencies and not complete a given task, but continuously try to correct or start over	**Growth of Capacities** (described on preceding page)

Growth of Skills	Growth of Skills	Growth of Skills	Growth of Skills	Growth of Skills
— developing fundamental skills in reading, writing and calculating	— language age closely parallels mental age (from 6 to 9 years) for individual who would fall within the chronological age range 10-14 considered for the middle school — can be reading from a pre-primer to a second grade level reader, dependent upon extent of retardation — in oral communication, frequently experiencing articulatory and other speech problems	— have disabilities in verbal learning: acquiring spoken, read and written language arithmetic — have disturbances in non-verbal areas: in learning to tell time, directions (north-south) in meaning of facial expressions (happiness, anger) in interpreting the behavior of others in interpreting meaning as conveyed in art	— if he has a personal pathology, unrelated to school he can compensate by success in academics but — if he has a intertwining of personal problems and school-related problems, he will have many deviant behaviors in academics or — he may be carrying his problems and maintaining himself until he meets additional stress from school which creates intensitization of his emotional problems (Morse, 1962) — needs the opportunity to begin each day with a fresh start. Each day's work must culminate at the end of the day to prevent anxiety building overnight — student's needs must be anticipated by teacher and planned for in order to clear the way for appropriate responses, i.e., if child is to have an art experience the teacher needs to be sure that art supplies are available in a designated location along with clean up materials (Gallagher, 1970)	— is not developing fundamental skills in reading, writing and calculating, has intense dislike of these subjects — disinterested in school program — has repeated at least one grade level — school is an unrewarding experience: frustration encountered between what he feels he must achieve and what he is actually able to achieve — frustrations intensify his deviant behavior — academic work must be presented in small enough portions to prevent appearance of insurmountable odds. This often precludes the use of a text, materials have to be abstracted. Texts and work material must be stored away from desk or carried out of the sight of the student

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY RETARDED	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
Growth of Skills (Cont'd)	**Growth of Skills (Cont'd)**	**Growth of Skills (Cont'd)**	**Growth of Skills (Cont'd)**	**Growth of Skills (Cont'd)**
— developing fundamental skills in reading, writing and calculating	— capable of more self direction than often credited	— academic work must be individually prescribed	— academic work must be presented in small enough portions to prevent appearance of insurmountable odds. This often precludes the use of a text, material has to be abstracted. Texts and work material must be stored away from desk or carrel and out of sight of the student. Requires his own work space as a physical reminder that individuality exists and that individual activities have been planned for him	— needs to be taught how to use his leisure time
	— needs variety of materials and methods	— requires his own work space		— requires his own work space as a physical reminder that individuality exists—and that individual activities have been planned for him.
			— for some students the reduction of visual stimuli is beneficial.	
			— for others, audio stimuli needs reduction through the use of ear phones or ear plugs	
			— needs legitimate reason for moving around the room, such as requirement that completed tasks are placed on teacher's desk, work counter designated table or bookshelf	— needs legitimate reason for moving around the room, such as requirement that completed tasks are placed on teacher's desk, work counter, designated table or bookshelf
			— cannot tolerate an unknown event being introduced unexpectedly	

		— will need much individual instruction	— begins his instruction at a one-to-one pupil-teacher relationship. At an appropriate time in his adjustment will be moved by teacher to close proximity to another student or students, either by having their desks located adjacent to each other for a spelling test, or with three other students at a large table with one student on each side and a large enough area in between to create a neutral zone. (This creates the need for at least three possible seating arrangements: carrels, movable desks, movable tables)	
Noticeable Change	**Noticeable Change**	**Noticeable Change**	**Noticeable Change**	**Noticeable Change**
— in motivation, attitudes and horizons	— in motivation and attitudes possible and may be greater determinants to school learning than his intellectual incapabilities	— in motivation, attitudes and horizons is relating to how early his problems were diagnosed, and special help provided. If delay in services occurred, the feelings of frustration and inadequacy within himself and the rejection he got from his environment form the non-verbal matrix in which he has molded his basic concepts of himself and the outside world (Rappaport 1)	— in motivation attitudes and horizons **NOT OCCURRING:** because of his inability to understand, cope with or receive the benefits of natural consequences such as smiles from the teacher peer's approval, report card grades, or positive social comments (Gallagher, 1970)	— in motivation, attitudes and horizons NOT OCCURRING because of a pervasive feeling of hopelessness; frustration, incompletely developed self-concept, and a mistrust of the adults in his world whose verbal and performance behaviors emit mixed messages which give him an indefinite model with which to identify

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
Noticeable Change (Cont'd)	**Noticeable Change (Cont'd)**	**Noticeable Change (Cont'd)**	**Noticeable Change (Cont'd)**	**Noticeable Change (Cont'd)**
— in motivation, attitudes and horizons	(see preceding page)	(see preceding page)	— if he has a poorly developed sense of separate identity it manifests itself in continuous reliance on external sources for definition of his attitudes, judgements, statements, and his own view of himself ("field dependent") — if he gives evidence of a developed sense of separate identity, then he has awareness of needs, feelings, attributes which he identifies as his own and distinct from others ("field independent") Less conforming to adult authority. — Motivation is a problem area: in catching his attention (also holds within it the problem of over or under stimulation) in determining whether his interest is to be considered a healthy manifestation of growth	(not occurring—see preceding page)
Developing	**Developing**	**Developing**	**Not Developing**	**Not Developing**
— concepts necessary for everyday living	— concepts necessary for everyday living when incorporated in his curriculum as part of his social learning	— needs help in developing belief that he can manage his own environment	— concepts necessary for everyday living; anxiety often high enough to inhibit learning — the feelings of uncertainty render ineffectiveness in meeting everyday demands	— concepts necessary for everyday living

		— needs help in learning to survive with his own cognitive style (his self-consistent way of functioning across perceptual and intellectual activities)	— needs help in developing belief that he can manage his own environment	
			— needs help in learning to survive with what he's got in the way of self concept, etc.	— not developing positive attitudes towards social groups and institutions
— conscience, morality and a scale of values	— same as above	— needs assistance in recognizing in advance the consequences, pleasant and unpleasant, of his behavior	— needs assistance in recognizing in advance the consequences, pleasant and unpleasant, of his behaviors	— conscience (remains shallow) poor capacity to accommodate his inner drives in socially accepted ways
II. PHYSICALLY	**II. PHYSICALLY**	**II. PHYSICALLY**	**II. PHYSICALLY**	**II. PHYSICALLY**
— rapid growth and body changes	— rapid growth and body changes	— no significant difference from his peers	— no significant difference from his peers	— no significant difference from his peer group
— all sizes	— all sizes	— all sizes	— no significant difference	— all sizes
— high energy peaks followed by exhaustion	— no significant difference from his peers	— no significant difference from his peers	— extremes of high energy peaks and low exhaustion	— no significant difference from his peers
— tremendous food intake	— no significant difference from his peers	— no significant difference	— may have food "fads"	— lack of availability of food may be part of his problem
— motor skills in general (walking, running, jumping, throwing, etc.) continue to improve	— more handicapped in motor skills considerably below average child in the finer and more intricate skills	— experience perceptual motor impairments	— motor skills in general may be affected by emotional problems	— needs a place (for after-school hours) in which to develop and use motor skills in general
— boys find athletic skills are prestigeful	— lag 1 to 3 years behind in tests of strength			— need to develop skills in physical education and music
— coordination continues to improve through adolescence without any dips or regression in the curve		— coordination may be a deficit area	— coordination may be affected by emotional problem	

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY RETARDED	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
Vision	**Vision**	**Vision**	**Vision**	**Vision**
— visual acuity continues to improve to late elementary or junior high age	— could have visual problems	— may or may not have visual acuity problems in addition to his perceptual problems	— physically, no different from his peers. May experience limited perception because of his emotional problem	— no significant differences from the peer group
Hearing	**Hearing**	**Hearing**	**Hearing**	**Hearing**
— reaches a peak of acuity around age thirteen	— may have disorders of speech and hearing	— may have deficits in auditory discrimination	— physically, no different from his peers, may have selective hearing because of his emotional problem	— no significant difference from the peer group
III. EMOTIONALLY/ SOCIALLY	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**	**III. EMOTIONALLY/ SOCIALLY**
— generally experiences some embarrassment due to body changes. Especially if the sudden body changes affect the adolescent's body image and self-concept		— no significant difference from his non-handicapped peer group	— inappropriate type of behavior or feelings under normal conditions	— he can either be not emotionally disturbed but frequently severely rule-violating: the large bulk of delinquents (Kraraceus, 1966) OR Emotionally Disturbed and seriously and persistently rule-violating (Kraraceus, 1966): compulsive, types behavior OR markedly impulsive poor ego-strength or self-image aggressive destructive resents routine and restriction
— appearance of awkwardness (social phenomenon): the early adolescent is unsure of himself and others, is embarrassed easily, and thus appears clumsy and poorly coordinated (Kuhlen, 1952)	— has difficulty in comprehending social situations	— may be awkward because of motor problems	— tendency to develop illnesses or fears associated with personal or school problems	
— needs to build wholesome attitudes toward self as a growing mechanism	— low self concept	— no significant difference	— needs to build wholesome attitudes towards self as a growing mechanism	— needs to build wholesome attitudes towards self as a growing mechanism

— has to cope with persisting overlapping situations of transitional status as a child-adult	— same as for non-handicapped peer group	— has to cope with **doubly** persisting situations of transitional status as a child-adult and his perception of this status as influenced by his learning disabilities	— has to cope with **doubly** persisting situations of transitional status as a child-adult and his perception of this status as influenced by his emotional problems — Can be a youngster with impulse problems OR can be an emotionally isolated, over-intellectual individual with strong perfectionist tendencies	— may not have reached the stage of overlapping situations of child-adult. More likely a disruption has occurred. Instead has moved to a child-teenage group overlapping situation wherein the demands, pressures and expectancies of him as a group member have superceded those behaviors considered by the culture as acceptable for adult. Therefore, he has in conflict behaviors acceptable as an individual child and those as a member of an adolescent subculture (which fosters a dependent, group oriented, non-thinking, much too emotionalized personality)
IV. VOCATIONALLY	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**	**IV. VOCATIONALLY**
— ambition related to ability as each sees it	— profit motive oriented, often unrealistically	— needs individually designed **prescriptive** education to be able to return to regular classroom and function appropriately therein	— needs individually designed therapeutic education to be able to return to regular classroom and function appropriately therein	— weak vocational ambitions needs help in conforming to limits
— changeable, related to transitory heroes	— low realism in goals		— needs to develop a process of coping, different modes of handling his problems and conflicts. Tends to choose occupations which are unconventional which do not particularly involve him in relationships with other people (Witkin, 1962)	— needs to be able to identify with an adult in order to learn limits (rules and regulations) and to abide by them
— relating indirectly to the world of work through: A) ability to undertake co-operative enterprises B) choice of activities suited to one's abilities C) assumption of responsibilities for one's acts D) performance of chores around the house and school	— is changeable — world of work seems distant, although many look forward to dropping out of school at age 16 — sometimes unconcerned about the future vocationally — interested in having driver's license			— needs stress placed on communication and social skills necessary for job — needs work experience by the 7th grade level. The purpose of which is to teach him what he couldn't be taught verbally

CHARACTERISTICS OF THE PRE AND EARLY ADOLESCENT (AGES 10-14)

NON-HANDICAPPED	EXCEPTIONAL CHILD NEGATIVE GROUP III			
	EDUCABLE MENTALLY RETARDED	**SPECIFIC LEARNING DISABILITIES**	**EMOTIONALLY DISTURBED**	**SOCIALLY MALADJUSTED**
— moving from dependence on parents for attitudes and values	— remains dependent upon adults		— has an inability to maintain satisfactory interpersonal relationships with adults	— can be experiencing a recycling of dependency needs. Fights with teachers and parents but is seeking the setting of limits
— becoming peer-oriented for similar security and: A) needs to learn to get along with age-mates B) needs to learn an appropriate set role C) is developing new relations with age-mates of both sexes	— more self-oriented needs to learn to get along with age-mates — needs to learn an appropriate sex role — rejected	— no significant difference from his non-handicapped peer group	— unable to assume tolerance for another's individuality therefore, not becoming peer-oriented A) needs to learn to get along with age-mates B) needs to learn an appropriate sex role C) needs assistance in developing new relations with age-mates of both sexes D) needs an increase in the social feedback cycle. The change in him has to be responded to by **new** feedback from the group with whom he is associated. This requires a great deal of work between teacher and group (Morse, 1962)	— he man be a solitary norm-violator rather than a member of a gang or group — if from a female based household pattern may need to seek his male identification through his association with his street corner group in testing and proving feats and episodes that involve norm-violating behavior and bring him to the attention of an official agency or authority (Kraraceus, 1966)
— is idealistic	— impressionable		— needs a "timeout" space wherein he can rest to recuperate from physical exhaustion from emotional load, or wherein he can regain his control, privately except for discreet supervision from his teacher or teacher aide.	— or she may have a fear of sexual inadequacy which could lead to sexual promiscuity for reassurance
— flights of ambition not always related to reality	— low control of impulses			
— enthusiasms often outrun his knowledge and judgement				

			— attempts need to be made by his teacher to produce experiences in the child which will release and develop positive energies in place of negative ones and make him aware of and use his own resources and abilities in his future behavior	— he has to find out that no one will tolerate his behavior or hire him in any kind of capacity; that there is not much future for him unless he changes his behavior — has to learn what kind of jobs he can get

CHAPTER III — CHARACTERISTICS OF THE MIDDLE SCHOOL

An appropriate next step, after the comparisons of the characteristics of the pre and early adolescent non-handicapped and handicapped, was to examine the program designed for pre and early adolescents. This program was, of course, that of the middle school created to reflect the needs of pre and early adolescents emotionally, intellectually, and physically. As an adjunct to and an implementation of the middle school were variations in staff usage and flexibility of space.

Prior to the Institute participants' going into group sessions to consider the relationships of the pre and early adolescent handicapped youngster to a relevant program, it was significant for them to have an orientation to the philosophy of the middle school. A resume of the material covered regarding program and staffing patterns follows. The material discussed which relates to flexibility of space will be included in the next chapter.

I. Unique Characteristics of the Open-Middle School: PROGRAM

The absolute focal point of the uniqueness of the middle school is the provision of a set of learning opportunities completely different from that of the usual elementary and secondary offerings, and uniquely relevant to the pre and early adolescent, placed within different organizational dimensions.

A. This **Program** has been given the following subcategorizations:

1. Personal Development

   The intent here is to give the pre and early adolescents a thorough knowledge of their growth patterns and understanding of their development as persons. Most essential to the success to this program aspect is for the pre and early adolescents to have opportunities for counseling, for the development of values, for health and physical development, and for exploration of many interests.

2. Skills for Continued Learning

   Reading

   Listening

   Compositional

   Asking questions, interviewing

   Organizing information

   Generalizing from observations, incidents, reading

   Evaluation of information, opinion, observation

   Problem solving[1]

3. Organized Knowledge

   - includes the traditional areas of mathematics, science, and language.
   - characterized by learning which is logical, sequential, and cognitive.
   - should be highly individualized with students progressing at a rate compatible with their abilities, interests, and attitudes.
   - learning objectives should be devised in behavioral terms with emphasis placed on the transition from the concrete to the abstract stages of difficulty.[1]

B. The dimensions of organization to facilitate the flexible educational program are:

1. Age-groups range for middle school has two prevailing patterns. These are either grades 6-8 or grades 5-8.

2. Horizontal Dimension — how pupils are grouped for instruction and other school directed activities.

   Existing patterns:

   a. "Planned gradualism" — (as used in the Chippewa Middle School in Saginaw, Michigan)

      (1) "home"

      Fifth grade pupils assigned to a "home" in a self-contained classroom with one teacher. Each fifth grade classroom is separated from other areas with use of framed partitions and a central utility core, including a toilet, closets, cupboards and a sink.

      (2) "neighborhood"

      Sixth grade pupils assigned to one classroom, spend most of their time with one teacher, move about in a moderate degree in different sizes and types of groups worked out by teacher teams as the needs of students are recognized.

[1]Donald H. Eichhorn, "The Controversy of the Middle School," Address presented at the National A.S.C.D. Conference in Chicago, Illinois, March 17, 1969.

(3) "society"
Seventh and eighth grade pupils spend two periods a day with homeroom teacher (language arts, social studies and group guidance). Remainder of the day spent with five or more teachers.

b. Grades five and six assigned to one teacher for at least ½ to ⅔ of a day. Special teachers available for physical education, science, art, music, homemaking, industrial arts, foreign language and reading.
Grades seven and eight completely departmentalized

c. Team Teaching

There are two approaches to team teaching. One approach is that of interdisciplinary; the other is composed of single-subjects. The leadership in the single-subject team is an appointed coordinator with released time for administration. The leadership in the interdisciplinary team follows emerging leadership principles.

3. Vertical Dimensions – some plan of non-graded, continuous pupil progress

II. Unique Characteristics of the Open-Middle School:
Staff

In order to provide the program unique to the middle school, differentiated staffing is necessary and is accomplished through the use of instructional teams, supportive services (psychologist, guidance counselor, materials center librarian, reading specialists); resource teachers (art, music, modern foreign languages, home arts, physical education); part-time teachers; paraprofessionals (teacher aides, clerical aides, technicians, intern teachers).

CHAPTER IV — OPEN SPACE AND THE EXCEPTIONAL CHILD

The whole issue of the exceptional child's being in the open middle school was formulated from the special educators' experience in working with children:

- who had problems in hyperactivity
  - had to be moving
  - were active
  - couldn't settle in for a day's work
- who experienced a forced response to stimuli
  - had to attend to things that were going on whether it was sound, or movement, or color, etc.
- who had a limited degree of time in which they could attend to a problem which necessitated a constant change of focus of the learning direction.

The special educators hypothesized all kinds of problems in moving such children from a limited environment to open space. They tended to garner support for their thesis from the phenomenon of a great increase in referrals for special education screening from school populations which had moved from the traditional structure to that of flexible open space. After special education screening and diagnosis, the referred children did not meet the placement criteria and were returned to the open space school wherein they continued to evidence some or all of the behaviors described above.

In a speech by Dr. Landis M. Stetler, the basic issue of the Institute was focussed by these questions:

> How can the special education teacher of the various program areas (the deaf, the retarded, the emotionally disturbed) best meet the instructional needs of the child who requires extreme adaptations in curriculum, method, or environmental management, and have that child also be an integral part of the open middle school?
>
> Can't special educators play a significant role in the open school without being rigidly structured to either openness or self-containment? What is special education's role in meeting the instructional needs of all children? Where is the line drawn? Where does special education begin to phase into the program?

The direction toward answers then seemed to be a careful examination of open space to see what was missing or what was existing to create problems. Therefore this chapter is concerned with the space characteristics of the open-middle school; the Mini-Matrix; the need for follow-up activity; the Observation Check Sheet; and, general conclusions as to prevalent organizational patterns and related space needs for exceptional children.

The space characteristics of the open middle school are:

> Each department or grouping (chronological age, subject area or other such groupings) are located together to permit ease in regrouping of students.
>
> Each cluster of teaching stations has an area for storage of materials of instruction, supplementary books, and textbooks.
>
> There are carrels for individual study.
> There are conference rooms for small groups from 3 - 20.
>
> There are larger areas for groups of approximately 100.
>
> There is an activity suite composed of one conference room, about ¾ the size of a general classroom, which contains furnishings which are easily moved or altered. The activity suite also has two auxiliary work rooms, each about ½ the size of a general classroom.

Related to the characteristics of the open space are the technologies involved therein, such as team teaching, computer assisted instruction, educational television and video taping.

The ability to manipulate space use has been the desire of educators since the emergence of non-gradedness, team teaching, individualized instruction, and educational technologies. Open space or space alteration is another instructional technique, one called flexibility.

Bednar and Haviland[1] see the teacher as having certain controls, or Program Factors. These controls are the changing of the size of a group of students by fusing them into or by separating them from other classes; selection and use of educational tools; and, flexibility of space usage.

Exceptional child educators who must consider the physical environment as conducive to the learning environment for the handicapped child view any alteration of the space as a critical factor.

From their orientation to the physical environment's serving as a catalytic agent in the learning process and hence developing the Basic Environmental Conceptualizations, Bednar and Haviland provided direction to permit flexibility or space alterations without detriment to the handicapped child. The Basic Environmental Conceptualizations become the psycho-educational component against which the teacher can project her competencies in creating a learning environment through the use of the Program Factors: Flexibility, Educational Tools, Fusion or Separation of the students.

[1]Bednar and Haviland, *op. cit., p.* 71.

To really get at the problem of how the exceptional child would fare in open or space variations, it was necessary for the Institute participants to consider Flexibility against each of the Basic Environmental Conceptualizations holding in mind at the same time characteristics of the exceptional child as he falls in Negative Groups I, II, or III.

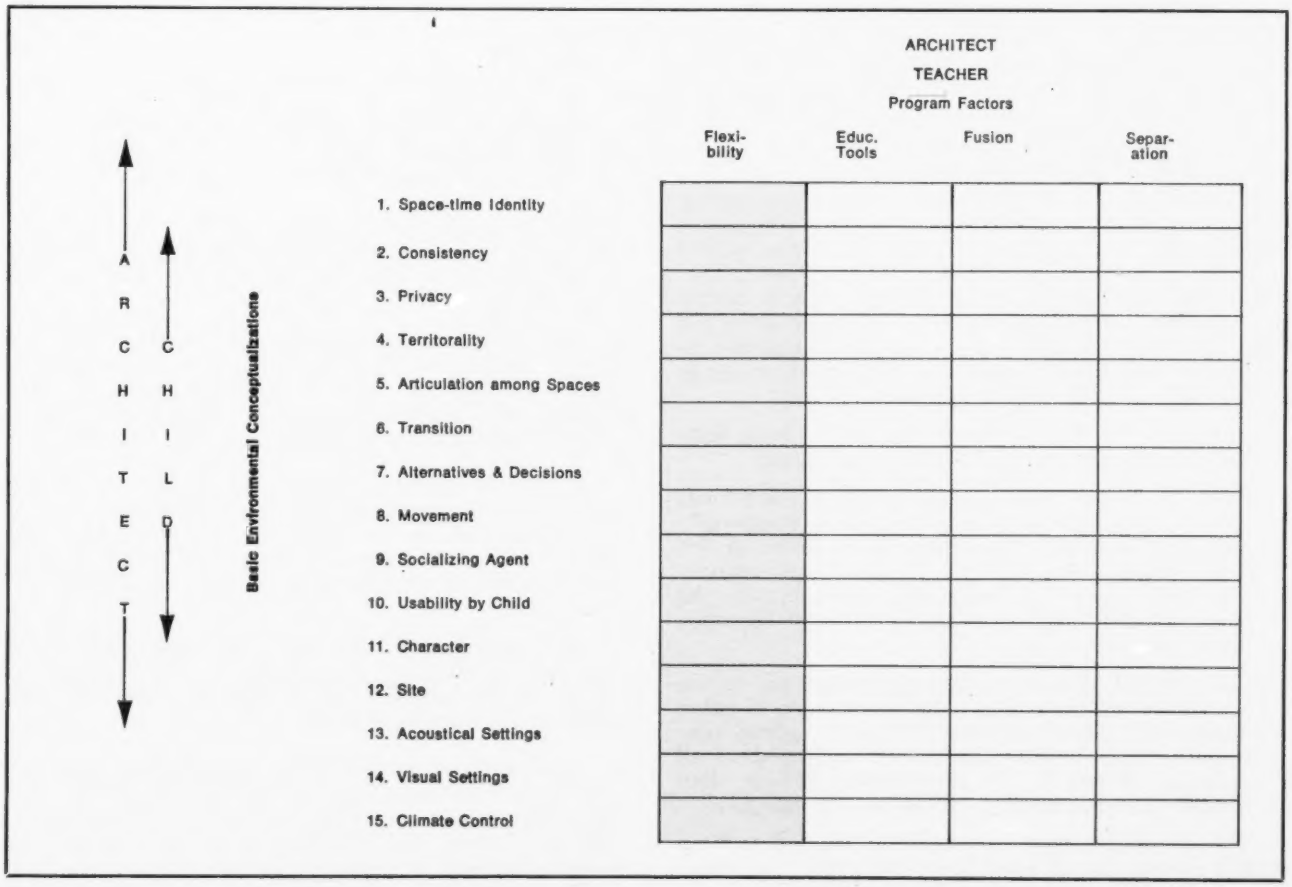
Upon completion of the analysis of the consequential relationships between Flexibility and the Basic Environment Conceptualizations, it may be important, at some future date, to assess relationships between the other Program Factors and the Basic Environmental Conceptualizations. The teacher might be creating an ambiguous environment, which, in turn, manipulates the child, through her inappropriate use of Educational Tools, Fusion, Separation.

Mini-Matrix

The relationships between the first of the Program Factors (Flexibility) and the Basic Environmental Conceptualizations are examined in the following pages in what was designated the "Mini-Matrix." "Mini" to indicate the delimiting of the Program Factors to that of Flexibility. "Matrix" to give use of the definition: "Something holding, or capable of holding, embedded within it, another object to which it gives shape or form."[1]

Hence the cross referencing of Flexibility to the Basic Environmental Conceptualizations with the view that therein lies that which we seek.

[1]R. R. Donnelley & Sons, *Webster's Seventh New Collegiate Dictionary*, p. 522.



Procedure Followed:

1. Each Basic Environmental Conceptualization is defined.
2. Consideration is given to the relationships of a particular Basic Environmental Conceptualization to the Program Factor: Flexibility.
3. A listing is given of the problems an exceptional child might experience as a consequence of the relationships.
4. Suggestions for compensation, alleviation or avoidance of the problems are listed under a subtitle, "Provide."
5. When, within the brevity of the Institute, the participants were unable to develop ideas to be submitted under "Provide," space was left for the work of future groups.

MINI-MATRIX

BASIC ENVIRONMENTAL CONCEPTUALIZATIONS		PROGRAM FACTORS: 1. Flexibility — to accommodate child's changing needs — to accommodate individual/groups — to accommodate children with new programs
	1. SPACE-TIME IDENTITY **Space** Child learns to observe similarities and differences between objects by locating them firmly in space and then observing these characteristics (important to advanced thinking) through sequential process: locates objects in space with reference to himself then later with reference to a second object with whose location he is familiar finally by means of a system of fixed directions. It is only in this last stage that a space structure becomes possible. Many exceptional children have found their development blocked here before this last stage was reached. Their behavior, particularly in the area of abstraction and generalization, suffers as a result. They require special assistance to permit them to develop a stable space structure with which to stabilize the relationships which surround them. (Kephart, 1960)	
	Problems Child must preserve localizations for the particular objects to which his attention is directed — must at the same time retain impression of localization of the objects that are at the moment in the focus of his attention — developed by translating temporal series of impressions into a simultaneous impression in space.	**Provide**
	1. SPACE-TIME IDENTITY **Time** Translations from time to space and back again are demanded of us every day. (Kephart, 1960) — the clock is an instrument which translates time into changes in space — when reading a word the child should have a simultaneous impression of letters organized in space — when asked to spell a word the child must take this simultaneous presentation and reduce it to a series of elements (separate letters) in time. (Kephart, 1960)	
	Problems In translating a temporal series of impressions into a simultaneous impression in space in translating a simultaneous impression in space into a temporal series in developing a space world around him—that which he is not looking at directly does not exist in developing a concept of clock-time	**Provide Time Cues** Using: a ray of sunlight moving across a modulated wall to demonstrate the passage of time soft music at a change of schedule change of light at a change of schedule calendars with seasonal pictures clocks growing plants mirrors (for reflections of self) (textures and colors)

MINI-MATRIX

PROGRAM FACTORS:

1. **Flexibility**
   - — to accommodate child's changing needs
   - — to accommodate individual/groups
   - — to accommodate children with new programs

BASIC ENVIRONMENTAL CONCEPTUALIZATIONS

2. **CONSISTENCY**

Child is learning to manipulate his surroundings, and it should provide him with successful experiences in doing this. The lack of consistency in his behavior must be compensated by consistency in the environment (Bednar & Haviland)

Consistency is brought about at a subliminal level

Problems

slow adjustment to environmental changes (EMR)

meaningless differences in colors, textures, lighting patterns, and surfacing materials

doors which do not generally swing the same way

hardware on doors, windows, cabinets, toilet partitions which are difficult to operate and inconsistent throughout the building

— Negative 3 Group derive comfort from the familiar — the same old record. Child needs to know where to find them.

Shifts in lighting level and quality

Provide

careful considerations of gradual changes in the environment such as furniture rearrangement, paint color changes, space use alteration and shifts in lighting level and quality

clear, consistent storage of media to be used by children

3. **PRIVACY**

The child is learning to deal with a socializing agent, the school, through a grouping-associational process. The opportunity for privacy is essential to good mental health and the development of personal identity

Problems

need for places with varying degrees of privacy

need for places with varying aspects of privacy:

- visual
- acoustical
- physical
- psychological

Provide

4. **TERRITORALITY**

The child in learning to deal with the socializing process of the school needs the reassuring feeling of knowing that his own individuality is respected. This is particularly critical for children who already suffer from a poor self-concept. "Territorality" is having a place of his own and exercising the defense of this place through personalizing it with drawings, color, writing, etc. (Bednar & Haviland)

Problems

Children who are having difficulty in orienting themselves in space need a place of their own to provide a base.

The visually-handicapped experiences feelings of loss of self-awareness.

Provide

For the visually handicapped a place for resting (standing, sitting), wherein he feels secure. This applies to corridors, media centers, etc., as well as classroom.

MINI-MATRIX

PROGRAM FACTORS:

1. **Flexibility**
   - — to accommodate child's changing needs
   - — to accommodate individual/groups
   - — to accommodate children with new programs

BASIC ENVIRONMENTAL CONCEPTUALIZATIONS

5. **ARTICULATION AMONG SPACES**

An articulation environment is one which displays the fact that it has different parts.

This refers not only to spaces within the building, but also to articulation between indoors and out.

Problems

The exceptional child needs to recognize and prepare for changes in activity and behavior.

The children with problems of hyper-activity in one or more of the modalities need a controlling of the kinds of physical stimuli associated with various learning tasks.

Children with problems of dissociation need to perceive meaningful wholes rather than parts.

Children with problems of perserveration need strong cues for a very definite "stop" to one activity before starting another.

Provide

An area for concentration which is low in stimuli

An area for reaction which is richer (than that above) in stimuli

Avoid clutter and "visual noise"

Certain tools in certain areas (science center, TV corner) refer to Hewitt's "Engineered Classroom"

Cues from environment to help keep teacher-talk to a minimum

Freedom to make noise in certain places

Cues for certain behaviors expected in certain places

6. **TRANSITION**

The transition space is the inbetween realm; the place between two places, ex.: the entrance to a building is a major architectural event.

The transition space from corridor to classroom should allow the child to hang up his coat, go to the bathroom, and prepare himself for learning activity.

The transition space from classroom to lunchroom should allow the child to wash his hands, obtain his lunch, and psychologically prepare himself for large group activity.

Transition spaces between activities are important.

- — a child just arriving from a long bus ride needs a "decompressing" space before entering the learning and working environment.
- — children returning from P.E. need a calming down transitional space.

Some transition spaces need to be strongly articulated whereas others can be more fluid.

Transitions of all kinds are needed in buildings for psychological relief:
between

quiet and noisy
dark and light
hard and soft
large and small
learning and playing
warm and cold
active and passive

Provide

An establishment of emotional "set" for change in activity

7. **DECISIONS AND ALTERNATIVES**

The decisions which the user of a physical environment must make to simply exist within it.

MINI-MATRIX

	PROGRAM FACTORS: 1. Flexibility — to accommodate child's changing needs	— to accommodate individual/groups	— to accommodate children with new programs
Problems	**Provide**		
Ambiguity of light sources, confusing reflections, rhythmic patterns are a negative influence on all program factors because emphasis must be placed on eliciting the proper response the first try, so failure is eliminated insofar as is possible for -3 group. The two extremes which must be avoided in designing for the child with learning disabilities and retardation: a. **Avoid alternatives which will result in frustration for the child.** Example: He wants to leave the room and sees an exit which he can not use (a large window, a firedoor, etc.) or cannot get to. He walks into a room and wants to sit down but cannot get to empty seats. b. **Too many alternatives (or undemarcated alternatives),** which may also result in frustration for the child. Example: He is faced with glass sidelights the same size as the doors they accompany. He is faced with restroom doors with no clear designation for "boys" or "girls." He is faced with multiple-branching corridors and no cues as to which he should take. He sees many different activities proceeding simultaneously in a space and cannot decide which to join.			
8. **MOVEMENT** Many of the preceding conceptualizations relate to the essential problem of movement in, out, and through educational facilities. Movement in a building is an important part of using it. A successful movement system will not only result in ease of circulation for the child, it will also increase his own confidence in his ability to cope with his environment (Bednar & Haviland)			
Problems	**Provide**		
Providing environmental cues to movement in order to facilitate student circulation (critical for blind). Need for a basically "simple" circulation pattern to help the exceptional child remain oriented in time and space: to know-where-he-has-been, where-he-is, and where-he-is-going. Avoiding the reinforcement of perceptual handicaps through the use of long and monotonous corridors or large space. Space-time distortion, ambiguity and frustrations with decisions and alternatives can all result. The movement of groups of children through undefined space can cause space-time distortion and create ambiguity for children not moving. Children who have problems with hyperactivity have a compulsion to keep moving, are active, and find it difficult to remain seated for long periods of time.	colors, shapes, textures, materials, and graphics can be employed to accomplish this. circulation paths should be well enough ordered to avoid ambiguity and to assist the user in making movement decisions. Where corridors of any length are necessary, they should be handled with great care. Where large spaces are involved, there should be provisions for directional cues. Where possible, circulation spaces should be developed as activity spaces in their own right and not be just regarded as channels from one place to the next. Jet of air to alert for "architectural barrier."		

	PROGRAM FACTORS: 1. Flexibility — to accommodate child's changing needs — to accommodate individual/groups — to accommodate children with new programs
Architectural barriers that might exist only for those children who are blind, partially sighted, or hard-of-hearing.	
9. SOCIALIZING AGENT	
The physical environment can be a socializing mechanism.	
A **sociopetal** plan encourages the development of stable human relationships drawing people together and assisting them in interacting with one another. It is centripetal in tendency and brings people to the center. Concepts in education are more **sociopetal** in nature.	
A sociofugal plan discourages the formation of stable human relationships by keeping people apart. It is centrifugal in nature and propels people to the perimeter of the plan (Dr. Humphrey Osmond in Bednar & Haviland).	
Problems	**Provide**
Visual contact facilitates interaction.	Control of the number of people within sight at any one time.
The size of the space in relation to the number of persons it houses.	Protection against overcrowding and overconcentration (too many people and too little space).
Continually drawing people to the center (sociopetal only) or to the perimeter (sociofugal only).	Allow a number of levels of sociability—large groups, intimate group, complete privacy.
Larger spaces often end up propelling their inhabitants to the walls and corners rather than to the center.	Allow easy and unobtrusive movement between increasing or decreasing levels of sociability from lunchroom to classroom to cubicle.
If the flexible use of space is aimed at being a socializing agent through an alteration of spacial configuration,	Allow transition between zones of equal sociability without disruption — a sensory hyperactive child moving from one area of privacy to another (say from a carrel to a locker) should not have to go through a large group area.
— alternate cues for the blind child must be a consideration	Careful design of larger group spaces if these are to foster interaction (that is, become sociopetal).
— the problem of bringing people within visual sight of the partially sighted child and the feasibility of inclusion of the number of people within that visual sight field must be a consideration	Certain educational tools have "built-in" capacity to bring together (movie) or separate (individual viewer).
— the acoustical setting for the hard-of-hearing is an important factor	
10. USABILITY BY THE CHILD	
A. **Scale Child-Related**	
Problems	**Provide**
Building has appearance of "looming" over the child as he approaches it.	Careful attention to site development, earthwork, planting, approaches, steps, fenestrations, parapets, and other features of the buildings facades.
Relating a building to a child's scale without overdoing scale accommodation and heightening the "adultness" of the teacher.	Consideration for appropriate scale.
Height of shelves, windowsills, operating hardware, and stair railings can cause a good deal of frustration for children if poorly located.	Storage: child-size.

MINI-MATRIX

	PROGRAM FACTORS: 1. Flexibility — to accommodate child's changing needs — to accommodate individual/groups — to accommodate children with new programs
Chalkboards that reach from floor to ceiling in the middle of the floor creates a feeling of looming.	A chalkboard which can be adjusted to child and teacher height.
B. **Physical environments should be designed so as to constantly conform to the child's immediate needs.**	
Problems Frustration in using the building and its appurtenances may further aggravate perceptual or psycho-social disabilities.	**Provide** Attention to anything that the child must operate: doors, windows, steps, rails, cabinets, chalkboards, serving lines, lockers, desks, etc. Use the criteria of simplicity, honesty, unambiguity, and consistency.
The blind child needs a ratio of about 10:1 (sighted: blind) for storage space and availability of books and equipment.	Similar emphasis on the external environment (grounds, walks, play areas, bus loading areas, etc.).
Postural variations concommittant to that task which child or teacher is involved.	Opportunities for various positions for painting, crafts, typing, etc., such as sitting, standing, semi-standing.
	Comfort in sitting positions on floor— for floor easels flat drawing pads
11. **CHARACTER** Avoidance of complete functionality and inclusion of dash of whimsy providing child appeal such as a playful sculpture, or mural, or shapes, or colors or textures.	
Problem The character should have a certain changeability — to accommodate child's changing needs — to accommodate individuals as well as groups — to accommodate new children with new problems Children need a "psychological relief" from adult structured home and school environments.	**Provide** Opportunities for experiencing character for deaf, partially-sighted and blind children. This is most important in order to enable and to assist these children in developing and maintaining kinesthetic and proprioceptive senses.
12. **SITE** Adapted for learning to develop life style, to provide direct contact with nature, to provide concrete objects for learning.	
13. **ACOUSTICAL SETTING**	
Problem In the alteration of spatial configuration disruption of the acoustical setting may occur and cause children to experience the sensations and behaviors of the hard-of-hearing. The intercom system can be a disrupting influence	**Provide** movable screens treated with acoustical controlling materials for use as dividers if the spatial configuration becomes smaller Sources for amplification if the spatial configuration is made larger A cut-off switch to the intercom A small signal light attached to intercom, telephone or other appropriate place to call teacher attention to office.

MINI-MATRIX

PROGRAM FACTORS:

1. **Flexibility**
   - to accommodate child's changing needs
   - to accommodate individual/groups
   - to accommodate children with new programs

14. VISUAL SETTINGS

"A sufficient quantity of light is important, but other factors such as glare, light distribution, and source brightness play an important role in good visual environment.

Although still a highly important factor, the foot candle (the measure of quantity of light) is no longer the recognized measure of lighting efficiency because foot candles alone do not determine how well one sees. The National Council of Schoolhouse Construction states that the concept of brightness-balance has been adopted as the informed approach to the design of an acceptable visual environment for schools. The concept of brightness-balance stresses the correlation of values of brightness difference and brightness patterns with values of lighting levels and varying tasks.

The brightness of a surface results from the light it reflects to the eye. Glare is excessively high brightness and is of two types, direct and reflected. Direct glare, resulting in distractions, discomfort or a reduction in visibility, is commonly caused by windows and lighting fixtures. It is light which the eye sees directly. Reflected glare is brightness which the eye sees reflected from a surface. Reflected glare is a minimum when the area producing light is maximum or when the brightness difference between the ceiling and the luminaire is minimum.

Most visual tasks are seen by reflected light; depending upon the character of the task, reflected glare may or may not be a problem." (Waligura, 1971)

Problems

To attain a balanced visual system concerned with comfort and efficiency. The brightness of the surroundings should be uniform and slightly lower than the brightness of the task.

Provide

Glare-free visual environment where the brightness balance is appropriate to the activity performed.

Some of the accepted methods of achieving brightness balance are:

- Ceilings, walls, woodwork, etc., painted for high light reflection
- Paint finishes matte rather than glossy
- Light colored furniture and equipment
- Light colored tack and chalk boards
- Light colored floors
- Multi-source daylight
- Continuous windows
- Window heads flush with ceiling
- Minimum width window mullions

MINI-MATRIX

PROGRAM FACTORS: 1. Flexibility — to accommodate child's changing needs — to accommodate individual/groups — to accommodate children with new programs	
Problems	**Provide**
Any change in the brightness level requires a readaptation of the eye	Recommended limits in the entire visual field for the brightness relationships of the various surfaces. Limits to the brightness of light sources exposed toward the work so that seeing is not hindered by reflection from the detail of the task, nor from the background Recommendations concerning levels of illumination (quantity in terms of foot candles) which must be related to the visual tasks to be performed and to the design of the lighting systems (Waligura)
15. CLIMATE CONTROL "Human beings can exist only within a fairly narrow range of temperature. Of all the components of the environment, the thermal unit may be the most vital. Yet it is less significant than other components in its effect on human behavior so long as conditions close to those required for human comfort prevail. Thermal comfort is not a luxury; it is a physical and mental requirement for the effective use of a classroom. Classroom discomfort means inattention, restlessness, fatigue and irritation for teacher and children. The best heating, cooling and ventilating systems for playrooms and classrooms are those which function unnoticed, but which contribute through their appropriate and unconspicuous functioning to the alertness, productivity, and relaxation of the persons living and working within the area" (Waligura, 1971)	
Problems	**Provide**
Optional thermal conditions vary according to the individual's age, sex, health, activity level, and other factors	
The four prime factors which control body comfort are:	
radiant temperature	the average temperature of surrounding surfaces should be the same as air temperature; a floor temperature that is warm to the touch, 79°F optimum
air temperature	65°F to 70°F for vigorous activities 72°F to 75° for sedentary activities
air movement	20 to 40 lineal feet per minute measured at approximately 30 inches above floor level.
relative humidity	40% to 60%
outside air	15 to 30 cubic feet per person; 0.3 to 0.8 cubic feet per minute per square foot

THE NEED FOR FOLLOW-UP ACTIVITY

Some of the participants had visited open space schools before coming to the Institute and were unable to find much evidence of the Basic Environmental Conceptualizations.

While working through the Mini-Matrix, the participants became more convinced than ever that many of the Basic Environmental Conceptionalizations should exist in all open, or flexible space, schools for all children, not just for the handicapped.

Frequently, while discussing a Conceptualization, certain problems emerged as a result of the relationship of flexibility of space to the Conceptualization. At times the group was at a loss as to what might be provided as support to development of that Conceptualization or remediation of difficulties an exceptional child might encounter. Often the architects and educators would express the need for further pursuit of the concepts.

With these points in mind the observation check sheet on the following pages was devised.

OBSERVATION CHECK SHEET

BASIC ENVIRONMENTAL FACTORS CONDUCIVE TO LEARNING FOR EXCEPTIONAL CHILDREN IN THE OPEN SCHOOL

Since the Basic Environmental Conceptualizations are essential in the learning environment, the need for some inventorying procedure caused the development of this observation check sheet.

This observation check sheet is eliciting two categorizations of observations: a physical environment and behaviors within that environment.

The objectives are to find the Basic Environmental Conceptualizations in the facility being examined and to determine, if possible, a match between behaviors and the Basic Environmental Conceptualizations.

The accounting for certain "things" (example: each student shall have a storage place of his own) as components of the Conceptualizations will be much simplier than will be that of inventorying the Basic Environmental Conceptualizations.

This seeming simplicity might divert the attention of the observer. Also observations of behaviors could be variant, dependent upon the subjectivity of the observers. Therefore, there would need to be a training period.

As part of this training session the observers will need to develop a commonality in interpreting the vocabulary used in defining the Basic Environmental Conceptualizations. Some simulated observations would be practiced to determine commonality of observations. The observers will also need the opportunity to individually, but at the same time and over a period of the same days, use the present instrument in an open middle school. After which they could compare their observations to see what overlapping occurred.

Since much work remains to be done on this observation check sheet, it is hoped that a pilot study of the instrument will be initiated. As a result of the pilot study, the observation team may find it desirable to add additional statements under some of the Basic Environmental Conceptualizations. Use of the instrument would also enable the team to determine how many subcategories for all the Basic Environmental Conceptualizations.

After the pilot study is completed in the use of the instrument, which will include corrections for "absent" or "zero" items, the rating instrument will then be used to collect information on the open schools in Florida and elsewhere. Finally, using a multivariate analysis approach there could be determined the amount of relationship between Teacher: Architect; Exceptional Child's Environment: Architect; and Exceptional Child's Environment: Teacher.

This procedure can also locate how much each of the factors contribute to degree of relationships. Then by pooling the more weighted factors, the strongest factorial relationships could be identified.

The datum from the statistical analysis will contribute to the development of educational specifications for exceptional children in the open school concept.

OBSERVATION CHECK SHEET

DIRECTIONS

All items in the evaluation record are to be scored on the basis of objective evidence obtained by personnel making the evaluation. It might be better to make two half-day visits to the schools.

The scoring method used in such an evaluation record involves the following principles: (1) evaluations should be based on actual observed evidence only; and, (2) performance ratings would be in terms of opportunity to perform.

Any rating device designed to record widely varying activities such as movement, socializing agent, transition, etc. probably should provide flexibility with respect to teaching opportunities also within the observation periods to view the use of space in operation. Since it is unrealistic to set up a comprehensive listing of all situations for observation it would be good to use a four-point scale preceded by a zero (0) point which is checked only to indicate that there was no opportunity for the items to be demonstrated during the observation period. The zero items are disregarded in the final scoring just as optional or surplus items may be on a pupil's test. The write-in comments requested will not be counted in the initial piloting of the observation check sheet.

Except for indicating the zero or "absent" items, as explained above, the method of scoring is in the form of a four-point scale to be scored as follows:

( ) 0 ( ) 1 ( ) 2 ( ) 3 ( ) 4

Check in box "4" if practice or condition involves all or nearly all pupils and is consistent.

Check in box "3" if the practice or condition involves most of the pupils in the group and few opportunities are missed.

Check in box "2" if practice or condition is present, involves some pupils but falls short of involving most pupils and of being consistent.

Check in box "1" if practice or condition is present, but inconsistent, reaches few pupils.

FINAL RATING:

The total score may be obtained as follows:

a. Subtract the number of items marked zero from the total possible items and multiply the remainder by 4. This would give the total possible score for the situation concerned.

b. Add the ratings of the individual items.

c. The total of individual items "b" divided by the total possible score "a" is the final rating.

Example:

Items checked at zero (no opportunity to observe) = 4
32 minus 4 = 28 (items to be considered)
28 X 4 = 112 (highest possible score)
Sum of ratings, i.e., ones, twos, threes, and fours = 84
84 ÷ 112 = .75 The final rating

A facility in which the final rating is less than .85 would be considered inadequate for use by exceptional children.

1. SPACE – TIME IDENTITY

Children demonstrate their ability to observe similarities and differences between objects in space by locating them in space, at teacher's request, and then observing these characteristics	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Children demonstrate their understanding of their personal relationship to space by using the movement patterns as established in the building design. (See transition and movement section)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Children demonstrate their awareness of time passing in space by responding to such cues as:	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
changing of light quality: as controlled by teacher for various tasks and the children respond by matching tasks behaviors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
ray of light moving across indoor garden can provide the child with information enabling him to respond to query as to whether it is a.m. or p.m. tactually, through change in temperature directed at an indoor "sundial"	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
clocks:					
a. by looking at clock and changing activity	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
b. by voluntarily calling attention to the time as an indicator of need to change class activity	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
calendars:					
by voluntarily changing the page or marking off date	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Children demonstrate their awareness of space time orientation and their making progress therein by their appropriate selection of academic areas off transitory or movement passageways that are cued by:					
geometric forms (could also be texturized)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
colors, in rugs or on walls	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
auditory cues provided in the building design:					
electronic signals	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

muzak	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
draperies that deaden sound at end of room	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
different sounds footsteps make over different surfaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Opportunity for observation of their relationships to indoor and outdoor space is provided for the children with windows offering a view	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Opportunities for children to experience space-time changes are provided in glare-free windows offering an outside view wherein the child can see changes in light qualities as well as seasonal changes	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

2. CONSISTENCY

Provision is made for gradual changes in furniture re-arrangement, i.e., moving one grouping at a time over a day	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There are clearly defined open storage areas	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Storage for blind or partially-sighted child remains located in the same areas	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Space use alterations occur for:					
specific purposes	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
is relevant to those purposes	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
is done consistently over any period of time	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
by teacher	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
by student	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Shifts in lighting level and quality are made consistent with changes in types of tasks	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Amount of light directed to side walls provides good chalkboard writing	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Doors throughout building swing in the same direction	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Hardware is easy to operate by the child and is consistent throughout the building:					
windows	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
doors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
cabinets	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
toilet door catches	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There are no meaningless differences in:					
colors – darkness creating an illusion of heaviness, etc.	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
textures – are textures: i.e., wood graining actually, tactually so and not a painted illusion	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
surfacing materials of carrels do not create perceptual distraction or distortion	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

3. PRIVACY

Visual privacy is provided through having carrels for individual study	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Visual privacy is provided for small groups (3 to 5) through use of movable sight barriers	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Visual privacy is provided between exceptional child group and the other teams	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Acoustical privacy is provided in the carrels used for individual study	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Acoustical privacy is provided for small groups (3 to 5) through treatment of the movable sight barriers (which have sound deadening coverings)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Acoustical privacy is provided between exceptional child group and the other teams	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Psychological privacy is provided in the restrooms wherein each cubicle has a door	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Provision is made for a "de-exceleration" space, also known as a "time-out" space	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

The time-out space provides psychological privacy in that:	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– has a minimum of 20 square feet	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– has low ceiling to create quiet, relaxed atmosphere	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– floor is soft, inviting to lie upon	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– walls are sound absorbent	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– ceiling is sound absorbent	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– has cool color scheme	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– is located near bathroom	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– is located near teacher	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– has a cot or mat	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– lighting 30-foot candles/general	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
rheostat control to dim or turn out artificial light sources	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
is child operable	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
screened or shielded natural light	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– acoustically has soft sound environment	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
is sound insulated from other spaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
has acoustical privacy	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– visually separated from classmates	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

4. TERRITORALITY

Each child has a self-selected chair at a table, or a desk which he considers his own and demonstrates ownership by regular use.	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Each child has a place in which to keep his belongings:

storage	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
tote tray	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
locker	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Each child has an area over which he has control for decorating or using a portion of for a bulletin board or for displaying his work, such as

study carrel	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
bulletin board	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
display shelf	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
other (describe)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

_____

_____

5. ARTICULATION AMONG SPACES

There is an area for concentration which is low in stimuli (visual, acoustical)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is an area for reaction in art, science, music or language arts which is rich in stimuli	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Clutter or "visual noise" is not evident	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is a definite demarcation between low stimuli areas and higher stimuli areas through use of lighting, textures, colors, etc.	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is avoidance of perservation cuing for children with problems of perservation, such as the use of overly repetitive patterns of black and white tiles in a room subjued in color, etc.	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

"Startness" and "stopness" created in the areas used by carpeting, etc., (where there are two colors of carpet, the color line tends to define the areas)

carpeting	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
by "other"	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

if this is checked, describe _____

_____

6. TRANSITION

The transition space is the inbetween realm; the place between two places.

The transition space from classroom to lunchroom allows the child to wash his hands and prepare himself for a large group experience	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is a space for children to go to and relax after a long bus ride	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Children returning from P.E. have a calming down transitional space	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is a transitional place between lunch and play areas	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
The academic areas are not used as transition spaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is a place for children to gather when there is unscheduled time	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Transitional spaces are provided between a. quiet and noisy activities	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
through use of:					
colors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
light	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
acoustics	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
climate control	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
texturized surfaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
b. large and small groups					
through use of:	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
colors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
light	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
acoustics	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

climate control	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
texturized surfaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
c. active and passive activities through use of:					
colors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
light	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
acoustics	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
climate control	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
texturized surfaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
d. learning and relaxing activities through use of:					
colors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
light	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
acoustics	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
climate control	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
texturized surfaces	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

7. ALTERNATIVES AND DECISIONS

The child is helped in making decisions and in choosing alternatives by having the following provided in the physical environment:

When he walks into a room wanting to sit down, he can get to an empty seat without having to walk in front of a large group	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
The location of the time-out space is such that for a child with a high tolerance for a certain amount of social relationships, the availability of the "time-out" space offers an alternative	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Exits are clearly designated permitting him to leave the room without being confused by a large window, a firedoor	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Toilets for boys and girls are so located as to permit access without having to walk in front of the group	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Toilet doors have clear designations for "boys" and "girls"	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Pencil sharpeners are positioned beyond the peripheral vision of the students and in such a place as to continue to remain out of view, regardless of space alteration	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
or					
are attached to a sound-deadening surface	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is an avoidance of multiple-branching corridors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
If there are branching corridors, directional cues are provided	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
No glass sidelights (panels) the same size as the doors they accompany	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Alternatives to attending instructional activities prevented by closed storage of materials and equipment when they are not in use	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

To prevent visual fatigue and loss of visual accuracy with resulting ambiguities developing in the physical environment:

Sources of high brightness in illumination are unobtrusive	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There are no large areas of low brightness in illumination	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Baseboards complement the walls in order to eliminate a strong band of brightness difference at a location that often falls within the visual field of the class	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
No large areas are less than one-third task brightness, regardless of its position in the room. (This means that desk tops and floors should be as high in reflectance as possible)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is no large brightness difference between the ceiling and the light sources in o on the ceiling	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
The ceiling is as nearly white as is possible (this surface reflects light back to the desktops)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Ceiling is at least as bright as the side walls	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
The lighter portions of the walls are equal to, or more than, one-half task brightness	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Side wall reflectances, including large cabinets and tackboards are between 40% to 60% reflectance	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Side wall reflectances above top line of chalkboard are between 70% and 80%	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

8. MOVEMENT

A successful movement system will not only result in ease of circulation for the child, it will also increase his own confidence in his ability to cope with his environment (Bednar & Haviland).

Color coding, shapes, textures, materials and door graphics are employed to provide environmental cues to movement (Example: carpets in various colors for directional cues)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Circulation paths are well enough ordered to avoid ambiguity and to assist the user in making movement decisions	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
+ children follow circulation paths as built by architect	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
– children have developed alternate circulation paths	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Where corridors of any length are necessary they are handled with great care to provide cues for directions at frequent intervals	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Describe cues _____

_____

Where large spaces are involved there are provisions for directional cues	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Describe cues _____

_____

Evidence of special consideration is given to the juxaposition of learning centers, restrooms, food service areas which increases the useability of such areas	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Some circulation spaces are developed as activity spaces in addition to serving as channels from one place to the next	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Describe _____

_____

Circulation spaces are organized into wide pedestrian "streets" which offer convenient access to quiet educational areas with no through traffic	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Flow patterns are set up which differ according to the activity areas	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

Describe _____

_____

9. SOCIALIZING AGENT

The physical environment can be a socializing mechanism:

A sociopetal plan encourages the development of stable human relationships, drawing people together and assisting them in interacting with one another. It is centripetal in tendency and brings people to the center, (concepts in education are more sociopetal in nature).

A sociofugal plan discourages the formation of stable human relationships by keeping people apart. It is centrigugal in nature and propels people apart. It propels people to the perimeter of the plan. (Dr. Humphrey Osmond in Bednar & Haviland)

Since visual contact facilitates interaction, provisions exist to control the number of people within sight by any one time	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Provision is made against overcrowding the size of the space is kept in relations to the number of persons it houses	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Provision is made allowing levels of sociability					
large groups	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
small groups	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
complete privacy	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Provision is made to allow easy and unobtrusive movement between increasing or decreasing levels of sociability	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Provision is made to allow transition between zones of equal sociability without disruption (a sensory hyperactive child moving from one area of privacy to another—from a carrel to a locker or from a carrel to a "time-out" space) should not have to go through a large group area	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Since larger spaces often end up propelling their inhabitant to the walls and corners rather than to the center, careful design of larger group spaces exist to foster interaction (i.e., become sociopetal)	a. ( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
	b. how_____				
	_____				

10. USEABILITY BY THE CHILD

Chalkboards can be adjusted to child (including a child in a wheelchair) and to teacher height	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Water coolers or fountains					
are hand and foot operated	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

are accessible from a wheel chair	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )
Height of shelves, windowsills, operating hardware and stair railings are related to child's scale	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )
There is a ramp	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )
There is no slippery surfaces across which children must pass	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )
Fire and security doors are child-operable and are wide enough for wheel chair passage (36 to 40 inches)	0 ( )	1 ( )	2 ( )	3 ( )	4 ( )
Doors are equipped with kick plates	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Some desk or work space surfaces are large enough to permit use of large print textbooks and tape recorders	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Storage used by the partially sighted has a lighted interior when open (like refrigerator)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
There is adequate tote-tray storage for child's use	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Tote-tray storage, wall attached for child in wheel chair	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Media to be used by child is easily accessible to him	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Areas designed for child usage, but avoided by children are done so because of seeming (rater's judgment)	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
ambiguity	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
inconsistency	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
At least one classroom sink at a height and so attached as to permit use by a child in a wheel chair	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

11. CHARACTER

To remind everyone that children have a need for a touch of whimsy, a moment of beauty, a relief from the psychological containments of "home" and "school."

There is evidence of child-oriented sculpture, painting, murals, shapes, textures or colors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

12. SITE

The site is adapted for learning.

There is evidence of provision for child's direct contact with nature, i.e., plants, animals, water, nature trails, earth forms	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Play area is part lawn and part asphalt	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

13. ACOUSTICAL SETTINGS

A cut-off switch to the intercom is provided for teacher use	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
A telephone with connections to the administrator and guidance counselor is provided	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
A small signal light is attached to telephone or an appropriate place to call teacher attention to office	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Movable screens treated with acoustical controlling materials are available for the teacher to use as dividers	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
The "time-out" space has acoustical controls built in which include:					
noise reduction factors	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
teacher-controlled tape deck music for listening	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Speech therapy room has sound and acoustical control	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Control of reverberation (persistence of sound in a room) exists as can be determined by ease with which speech can be understood in areas in which a variety of loud activities are being carried on at the same time	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
A featureless background sound is used to mask other noises	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Size of room is large enough to provide adequate separation between work groups	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Population within room does not exceed the number for which planned.	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

14. VISUAL SETTINGS

Under optimum conditions for visual comfort and efficiency the brightness of the surroundings should be uniform and slightly lower than the task, but this is often difficult to achieve. (Waligura, 1971)

Levels of illumination:

	Foot Candles General Work	Foot Candles Detail Work					
Classroom	70	100	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
arts and crafts	70	120	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
Book center	70	120	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
nature study/science	70	120	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

dramatic play	50	80	(0)	(1)	(2)	(3)	(4)
tutoring/quiet	70	120	(0)	(1)	(2)	(3)	(4)
music	50	80	(0)	(1)	(2)	(3)	(4)
indoor recreation	15		(0)	(1)	(2)	(3)	(4)
bathroom	30		(0)	(1)	(2)	(3)	(4)
multipurpose	50	80	(0)	(1)	(2)	(3)	(4)
teachers office	100	150	(0)	(1)	(2)	(3)	(4)
material preparation	100	150	(0)	(1)	(2)	(3)	(4)
psychologist office	100	150	(0)	(1)	(2)	(3)	(4)
speech therapist office	100	150	(0)	(1)	(2)	(3)	(4)
social therapist office	100	150	(0)	(1)	(2)	(3)	(4)
social worker office	100	150	(0)	(1)	(2)	(3)	(4)
lobby/reception	30	45	(0)	(1)	(2)	(3)	(4)
student workroom	100	150	(0)	(1)	(2)	(3)	(4)
corridor	10		(0)	(1)	(2)	(3)	(4)
storage (classroom)	20		(0)	(1)	(2)	(3)	(4)
storage (general)	10		(0)	(1)	(2)	(3)	(4)

15. CLIMATE CONTROL

An optimum thermal condition in which most students are at their greatest efficiency is the object of a good thermal environment. These thermal conditions will set the sensitive body mechanism at their minimum stress point and promote the greatest alertness over the longest period of time. (Waligura, 1971)

radiant temperature

the average temperature of surrounding surfaces are the same as air temperature, a floor temperature that is warm to touch 79°F	(0)	(1)	(2)	(3)	(4)

air temperature vigorous activities, 65°F to 70°F	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
sendentary activities, 72°F to 75°F	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
air movement 20 to 40 lineal feet per minute measured at approximately 30 inches above floor level	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
relative humidity – 40% to 60%	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
outside air – 15 to 30 cubic feet per person	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4
0.3 to 0.8 cubic feet per minute per square foot	( ) 0	( ) 1	( ) 2	( ) 3	( ) 4

SUMMARY SHEET

Totals:

_____ 0 items (no opportunity to observe)

_____ Ones

_____ Twos

_____ Threes

_____ Fours

_____

_____

Sum of ratings

198 (total of statements for observation)

— (Total of 0 items)

_____

items to be considered

X 4 highest possible score for any item

_____

total highest possible score

$$\frac{\text{total highest possible score}}{\text{sum of ratings}} = \text{The final rating \%}$$

A facility in which the final rating is less than 85% would be considered inadequate for use by exceptional children.

General Conclusions as to Prevalent Middle School Organizational Patterns and Related Space Needs for Exceptional Children

Since the open middle school ranges in organizational patterns from 5-8, 6-8, (and sometimes including the 9th grade, although this is a contra-middle school philosophy) and size from 720 children to several thousand, there is a comparable range of desirable services for exceptional children. The various patterns are described below.

In a middle school of 720 children the various exceptionalities would have the following representations:

14 to 15 educable mentally retarded	7 or 8 socially maladjusted
36 speech and hearing handicapped	1 deaf
7 or 8 emotionally disturbed	1 or 2 visually impaired
7 or 8 specific learning disabilities	1 or 2 physically handicapped

For middle schools with an enrollment larger than 750, the following prevalence figures should be used in planning for exceptional children who are likely to be part of that school's enrollment:

educable mentally retarded	2.00	vision	.09
physically handicapped	.15	emotionally disturbed	1.00
speech and hard of hearing	5.00	specific learning disabilities	1.00
deaf	.10	socially maladjusted	1.00

As an example, take a middle school with a population of 1200: EMR .02% x 1200 = 24 children

The **type** of space, self-contained classroom or resource room, to which an exceptional child would be assigned in either large or small middle school would be the same:

	Self-contained Classroom		Resource Classroom
Educable mentally retarded – with fusion into regular program to extent of student's coping ability	X		
Emotionally Disturbed – placement will be dependent upon the severity of child's illness. May have to remain completely in self-contained classroom with later use of the resource room as a half-way fusion to regular classroom. Or the child may be able to tolerate regular classroom fusion with the back-up support of the resource room.	X	and/or	X
Specific learning disabilities			X
Socially maladjusted – with fusion into a special work study program, using the resource room as a back-up	X	and/or	X

The **amount** of space would vary for the educable mentally retarded between the small and larger middle school. A middle school of 750 students would need to provide between 1300 and 1500 square feet for a teacher and 15-18 educable mentally retarded children.

Multi-purpose Lab	**Sq. Ft. per unit**
Communications skills area	300
Domestic skills area	325
Home-type toilet	50
Crafts – Shop Area	500
Toilet	25
Storage	150
Sheltered patio	(150)

This does not include the 20% factor for walls, overhang, covered walkway, etc.

Type or Kind	Capacity		Indiv.	Square Feet	
	Each	Total		Sub Total	Total
Academic Area (net teaching)	15	15	43.3	650	
Storage (Movable)			6.6	100	750
Domestic Skills Area (including storage)	15	15	63.3	950	
Boys' Toilet (includes 1 shower)				50	
Girls' Toilet (home types)				50	1,050
Occupational Skills Area	15	15	63.3	950	
Custodial Closet and Storage			10	150	1,100
Teacher Office, Planning and Work Area	(3)	(3)	50	150	
Itinerant Teacher and Conference Area				150	300
Sheltered patio				(150)	
TOTAL	45	45		3,200	3,200

This does not include the 20% factor for walls, overhang, covered walkways, etc.

For larger than 750-pupil middle schools the amount of space necessary for the educable is thought of in terms of a three-teacher-team serving 45 pupils.

The self-contained (with fusion out) spaces used by the emotionally disturbed, learning disabled, and socially maladjusted would be the same square footage as is provided for the non-handicapped pupil's instructional space.

The resource rooms for the emotionally disturbed, learning disabled and socially maladjusted must consist of 700 sq. ft., excluding toilet rooms, conference rooms and teacher work areas.

A distinction must be made between the size of a resource room used by a speech clinician and those used for the emotionally disturbed, learning disabled and socially maladjusted. To begin with, it is important to do away with the myth that a speech clinician, psychologist, reading clinician and health nurse can all occupy the same resource room through careful scheduling. Reality proves that the speech clinician is too often carefully scheduled out. The speech clinician must have 100 square feet for each instructional period, plus 50-80 sq. feet for storage and clinician's work area.

If the teacher of the visually impaired, or the hearing clinician is on an itinerant basis, serving several other schools, she should be provided on a permanent assignment a minimum of 100 square feet (excluding storage, etc.) for each instructional period.

If the visually impaired and hearing handicapped are being transported into a particular middle school which is serving as a county, or district center, a resource room would be necessary. This would have a minimal net area of 700 square feet, excluding toilet rooms, conference or seminar rooms and teacher work areas.

The psychologist should have 100 sq. feet for testing, conferences and paper work, with 50 square feet for storage. If he is to be working in conjunction with the teachers of the emotionally disturbed and socially maladjusted he would need an additional 100 square feet. An ideal arrangement would be to have two rooms with an observation window between. Then he could use one room for testing of children, etc., and the other for providing a theurapeutic environment.

When a school district is planning a new middle school wherein there are enough educable children for one class, it is frequently educationally and economically feasible to move two additional units to that site, creating a three teacher team. Thus a middle school with an enrollment of 750+ could have a need for the larger amount of space previously described.

Some school districts may tend to see the middle school concept as relating to a chronological-age housing of various exceptionalities. This is merely another kind of special school approach with emphasis shifting to the handicapping conditions and away from the basic middle school philosophy.

The openness, or flexibility of space, may appear most attractive for a facility design to house all of one exceptionality in a county or school district. To those educators and architects who may take this approach, institute participants urgently recommended that the Basic Environmental Conceptualizations are incorporated.

CHAPTER V — THE EXCEPTIONAL CHILD IN THE OPEN MIDDLE SCHOOL

This chapter reflects the activities of the participants as in three committees they sought answers to the appropriateness of placement in the open middle school for exceptional children. Most of the committee work which related to open space and the exceptional child has been incorporated into Chapter IV. Thus direction has been given to seeking additional information prior to a research based position statement. As part of an interim report, each committee expressed concerns that must be reviewed before educational specifications are written for any open middle school wherein consideration is being given to placing exceptional children.

The committees also reported on the relationships of staff and program of the middle school to the exceptional child. These reports were based on the assumption that the following provisions exist in any open middle school:

a. Individualized prescriptive instruction
b. Team teaching with ample planning time
c. Modular-flexible scheduling
d. Non-or un-gradedness – multi-age grouping
e. Appropriate space variations
f. Aides and/or paraprofessionals
g. Audio visual aides **immediately** accessible

Since the role of the exceptional child teacher in the open middle school will be a constant whether she would be working with children grouped in Negative Group I, II or III, it is relevant at this point to give a role description.

Participants felt that the exceptional child teacher should be a member of one or more of the teaching teams. As a team member, the exceptional child teacher should evaluate and interpret available diagnostic information for all children referred as exceptional and carry out further diagnosis as needed. He should plan the instructional program for individual exceptional children for purposes of scheduling and fusing the students in the regular educational program when possible.

This scheduling and fusing of the exceptional students should be for one activity, one subject, one class, etc., and does not imply total or complete fusion at any one time, for any one child. The program should be in accordance with the educational objectives as developed for specific area of the special curricula as required in the State Accreditation Standards. The special education teacher would then have prime teaching responsibility for those students in those areas where fusion is not possible. As indicated above, this should be flexible and could change from day to day, week to week, and from child to child.

To foster and enhance this fusion the teacher should act in a quasi-consultant role in assisting the regular education teachers in developing and obtaining appropriate content materials and other educational tools. It is conceivable that there might be some children who will and should be in the regular education program for the major portion of the instruction, but who might function in one or more areas at a handicapped level.

To serve in this consultative role, the special education teacher would need some release time from direct teaching duties to observe and help the student's adjustment to the integrative situation. The consultative role would also involve interpretation of the exceptional child's characteristics and needs to other professional and non-professional staff, and sufficient planning time should be provided with the total teachers involved. In order to remain within the state board regulations and requirements, it is imperative that the special education teacher **does not become** a remedial teacher working with non-exceptional children. If the individual prescription instruction requisite of the middle school is adhered to, there should be no danger of this happening.

Provision must be made for an adequate number of aides and/or paraprofessionals. This is essential since teachers will be working with variant sizes of groups in different places, and some exceptional children will need to leave the immediate area. They or the remaining groups will need supervision.

Sufficient supportative personnel such as remedial teacher(s), speech clinicians, psychologist, school social worker are necessary. Equally important is the provision of spaces for their use.

The human interaction skills of people on the team are as important factors to the success of the team as are their individual skills and competencies. Pre and inservice involvement in learning to experience the dynamics of team roles is crucial.

As the committees reported, emphasis shifted on the three major characteristics of the open middle school: space, staff, program, in an interesting relationship to the severity of handicapping conditions.

Negative Group I – Speech Impaired, Crippling and Chronic Health Conditions

The children in Negative Group I are most heterogeneous. The committee felt that a flexible middle school would meet the needs of these children (in the event that no secondary disability was present) if additional consideration were given to program and space.

1. **Programs**

   It was viewed that the following provisions would enhance the opportunities for learning from the standpoint of environmental conceptualizations:

   a. **Provisions for socialization, privacy, separation/fusion**

      A study by Winifred T. Kinn (dissertation 1964)[1] reported that physically handicapped children stated that they had few opportunities for socialization, fewer close personal relations, and less physical adequacy than non-handicapped children. Also, children with non-visible handicaps expressed

[1]Winnifred T. Kinn, "Self Reports of Physically Handicapped & Non-Handicapped Children," *Dissertation Abstracts*, 1964, Vol. 24, p 5196.

higher self-concepts than children with visible handicaps.

b. **Provisions for the development of space-time identity** would appear an obvious advantage in facilitating movement.

c. It would seem that this group of children's needs are quite compatible with the "normal" child with the possible exception of lowered vitality. Obviously, **modular scheduling** will provide an avenue more amenable to appropriate time factors.

d. A program of specially adapted physical therapy, and prevocational therapy (modification of attitudes) is recommended to supplement the regular physical education program and to develop realistic attitudes.

2. **Flexible Space – Physical Environment**
Critical factors:

a. **Acoustical Control and Speech Therapy** – Acoustical conditions must be given extremely careful consideration in light of operant techniques towards remediation, sound/auditory discrimination, etc., research supports the notion of modification of effective articulation by operant techniques; MacLean, J. E., "Shifting Stimulus Control of Articulation Responses by Operant Techniques," University of Kansas, 1965.

b. A minimum of 100 square feet permanently assigned for each instructional period, plus 50-80 square feet for storage and work area.

c. Circulation Patterns:
Special consideration should be given to the juxtaposition of learning centers; rest rooms, food service areas, etc., and exits and the usability of such areas.

Negative Group II – Blind, Partially Sighted and Hard of Hearing

The most significant considerations for the children in Negative Group II are those which relate to space design and staff.

There are critical areas in writing educational specifications for the physical environment housing the child who is blind, partially-sighted and hard of hearing. The following are recommendations for these areas as identified by the committee members:

1. **Space Design**

a. **Blind-Critical Areas:**

1. Stairways should not extend into hallways or be at the end of passageways without some angling or curving in the hallway to cue the child that there is a change in elevation.
2. Architectural barriers should be minimized:
(a) One level school perhaps best
(b) Recessed doors and water fountains
3. Covered walkways should be clear of obstacles. Edge of walkway should be clear of obstacles so blind child can follow edge for guide (keeping to the right of traffic as per blind education).
4. Sounds-odors-pressures–are quite often major cues for the blind child; in open middle schools, texture may become of more importance. If visual cues are being used in the building for walkways, etc., cues need to be established for blind.
5. Storage space of maxium importance for Braille Books. No less than 10 spaces to one space for sighted children's books.
6. Brailler and tape recorder need to be with blind children. Will need space for the same.
7. Adjustment to change is often difficult for a blind child. Should not consider moving the materials/equipment more than once a year.

b. **Partially Sighted – Critical Areas**

1. **Light control** – child's own sources of light often paramount
2. Storage – not as critical but still 2-3 times space of regular books
3. **Desk space** – remember size of large print books as to desk top size. Specialized desk might be suggested.
4. **Equipment** – tape recorder regular part of his every day work.

c. **Hard of Hearing – Critical Areas**

1. Lighting: No shadows on faces. Good, distributed lighting
2. Acoustics: The flexibility of space variations in the open middle school places a greater demand on the student to locate source of sound message, therefore:

Major source of sound for student must be distinguishable and not interferred with by other sound sources such as any electronic signals for sound equipment; e.g., fluorescent lighting; IBM time signals.

Floors need good acoustical treatment-carpeting.

Since the children in Negative Group II will be served from a resource room, the committee described the relationship of the special education resource teacher to the staff:

Role of Resource teachers for the Blind, Partially Sighted, and for Hearing Impaired within the Open Middle School

a. The Function: As a team member having direct involvement with children from the area (visually or hearing impaired)

1. Prior to school year beginning, or prior to child enrolling in school, resource teacher will communicate with each member of team as to the resource teacher's knowledges of child's abilities (1) motorically and (2) possible problem with environment.
2. Interpretation of academic abilities, creative backgrounds physical aptitudes, etc.
3. Consultant to team members (see above) and their instructional personnel and also to children who request information for confusion about visual difficulties or hearing loss.
4. Where possible the resource teacher works with non-instructional staff to correct their misinformation about visual and hearing handicaps.

b. **Real time usage by resource teacher:** Adaptability of time schedule as to need of child, instructional materials required is paramount.

To be considered also is the commitment of the resource teacher to other children in other facilities.

Careful planning must be maintained so that scheduling for the visually or hearing impaired within the school district is of major importance with the professional personnel.

With the exception of the educationally deaf, the concensus reporting of the Negative II Committee was that with the presence of the variables (Environmental Conceptualizations as pertaining to space, the Middle School philosophy as relating to staff and program) the exceptional children in the Negative II grouping could be a part of the open middle school.

It was the opinion of this committee that the child who was operating at the "deaf" level, irrespective of audiogram readings, would not function well in an open middle school complex. This was believed because these children are usually 2½ or more years delayed in language development. Therefore they need a more limited environment wherein concentration on this problem is possible.

Negative Group III – Educable Mentally Retarded, Emotionally Disturbed, Learning Disabled and Socially Maladjusted

The participants concerned with the educational needs of the Negative III grouping of exceptional children reported their considerations, the baseline for which being the assumption that all elements pertaining to the open middle school concept were existent.

To creatively use space-flexibility as supportive and conducive to learning for these particular youngsters, the Basic Environmental Conceptualizations must be an incorporate of the physical environment. The following minimal provisions will need be made; and as datum from the observation check sheets return, expansion of this minimal list is to be expected:

space must be available for those EMR, SLD, E.D. children who cannot tolerate the complexities of open space, a condition significant to their handicap. This space must be available at all times for a group representing any one (not mixed) of these exceptionalities and should be 700 sq. feet not including storage, etc.

a similar space should be available for non-exceptional (but "field dependent").

space must be flexible to provide for large groups (10 ED, 10 SLD, 15 EMR).

small groups (2-4) and individual privacy (such as a carrel).

"time-out" space large enough for folding cot, within visual supervision of teacher or aide but shielded from group

space for teachers to be alone (work area)

adequate storage space for equipment and materials (students)

adequate and accessible space for teachers' materials

differential environment control (lighting, acoustics, temperature) for varied areas and activities

toilet facilities, immediately adjacent, or part of area

learning spaces designed so as to be easily recognized as such

furniture should offer maximum adaptability

observation areas (if included) for teachers and other interested visitors with accessibility to such so designed as to prohibit distraction of and stimulus response from the students

simplicity of circulation patterns

transition spaces into the learning space should provide pressure reduction factors such as avoidance of the heavy in-school pedestrian traffic, use of music, acoustical control, color and texture to help the child to maintain his inner control and reduce anxieties

entrance to the area should not be through other classroom areas

there should be an outside exit from the teacher's workroom but not directly from the area used by the youngsters

In addition to the competencies in diagnosis and remediation, as mentioned in the beginning of this chapter, the teachers of the exceptional children in Negative III must also have:

individualized and sequential programming techniques based on a comprehensive overview of both regular and special curriculum materials for all grade levels

a thorough knowledge and understanding of behavioral principles as they apply to the management of these children, particularly the emotionally disturbed and socially maladjusted

ability to organize concerted efforts, as a team member, with psychologists, psychiatrists, social workers, juvenile officials and other professional personnel.

Inservice with the staff of an open middle school will be necessary before and continuously after the inclusion of a program for the educable mentally retarded, emotionally disturbed, learning disabled or socially maladjusted. For each of these exceptionalities the middle school staff will need understanding, attitudinal change and behavior management techniques (for their own as well as the exceptional child's behavior).

Team members and staff must expect to be tested out in all different ways, because the child fears that the teacher, with whom he is working will grow angry and reject him and further hurt his pride. He will have learned trust and compensatory skills in his special class but new contacts such as with a team will cause him to go through the testing routine again.

As part of the desired attitudinal change the staff will need to work through its feelings of fear of and withdrawal from emotionally disturbed and socially maladjusted children.

Before the emotionally disturbed child can work his way from a self-contained room, through a resource room into the mini-world of reality of the team wherein he would try out his newly learned controls, the team would need to be prepared for their roles.

Essential to the team's performance will be its awarance of the exceptional child teacher's approach to educational intervention for the emotionally disturbed child. One of which is to derive intervention from learning theory and to tend to emphasize specific behavioral objectives in the careful planning of the classroom structure and reward contingencies. Another approach tends to focus more on psychodynamic aspects of classroom interactions between children and teacher. In this setting, relatively more emphasis may be placed on the child's self-concept, his ability to relate positively with his peers, and his growth in more accurate perceptions of the nature of social situations in which he is involved.

One characteristic which the educable mentally retarded and socially maladjusted have in common is their very limited comprehension of the verbal world. The staff would need to reduce the comprehending level of difficulty of direction receiving from an adult to that of a seven year old.

Of the exceptional children in Negative III group, the EMR have been the first to experience inclusion into existing open middle schools. The reasons are varied, the results are fairly consistent and tend to point up interesting facts as far as program is concerned:

the **philosophy** of the middle school is more hospitable for the EMR than the junior high or intermediate levels, the usual organizational structure for EMR's of this age

because of the exploratory opportunities offered as a part of the middle school philosophy

which gives the EMR youngster the opportunity to more nearly successfully compete and develop social relationships with his peer groups. For within his EMR group the youngster will be learning the competencies which he will use in the exploratory sessions.

the effectiveness of the program for the EMR is nullified if the students are placed in open space

a sharp dichotomy appears across the 55-75 IQ range of EMR when assigned to an open middle school. The upper group has been able to some extent to move into the middle school program. The lower groups are not successful.

The inclusion of the educable mentally retarded into open middle school as it has occurred to date has been without the inclusion of the Basic Environmental Conceptualizations in their entirety. It would be interesting to determine the program success ratio to the presence of some of the basic environmental conceptualizations incorporated independently by architects.

Before learning disabled, emotionally disturbed or socially maladjusted are to be considered a part of a middle school their particular program needs must be carefully considered.

The learning disabled, ten to fourteen years old, children will have severe problems if intervention has not occurred earlier. The severity and complexity of their problem will determine the extent of their participation in the middle school program. The program thrust for these youngsters will be to enable them to develop circumventive procedures which will hold for them in learning environments other than the special classroom, whether it be in the team situation or the world outside.

The program for the emotionally disturbed will be psycho-educational, inclusive of therapies, parent involvement, etc. When the child can tolerate the educational environment outside the special class or resource room, he will need the extension of the general aim of increasing structure into the larger field wherein will be the guarantee of clear directions, firm expectations and consistent follow-through.

In fact, if one general statement were to characterize the program for the educable mentally retarded, specific learning disabled, emotionally disturbed and socially-maladjusted the preceding could be it.

The committee reporting for the Negative III group were very firm in their concluding statements that prior to the inclusion of these children in the open middle school there must be adherence to the Basic Environmental Conceptualizations.

CHAPTER VI — SUMMARY

Bednar and Haviland's Hypothesis **that in obtaining the physical environment descriptors for the more severely involved exceptional child, or Negative Group III on the Continuum of Adaptive Mechanisms, the factors were then existent for the less involved handicapped children, or those in Negative Group I** was positively supported by the work of the Institute participants.

Although Bednar and Haviland address themselves to children below the X (Mean) on the Continuum of Adaptive Mechanisms, their Hypothesis is also relevant to all children to the right of the Mean.

In using Bednar and Haviland's Basic Environmental Conceptualizations to test their Hypothesis against the organizational patterns of the open-middle schools, the Institute participants found:

1. The open middle school as an educational concept offers possibilities for most children.
2. When the open middle school concept is translated into a physical environment, the most important factors such as the Basic Environmental Conceptualizations are intermittently, incompletely included or entirely excluded. The end result is not the viable learning environment sought by educators to house their conception of the unique needs of the transescent (pre and early adolescent). Instead there exists a shell-like physical environment.
3. The open, or open middle school minus the Basic Environmental Conceptualizations creates a pseudo-exceptional child.
4. An observation check sheet, incorporating the Basic Environmental Conceptualizations should be used on existing open middle schools.
5. Educational specifications incorporating the psycho-educational aspects of the Basic Environmental Conceptualizations should be developed for open middle schools.
6. The necessity of general cautionary criteria for the inclusion of exceptional children in the open middle school:
   a. all the conditions which make the open middle school unique are existent
   b. the Basic Environmental Conceptualizations are an incorporate part of the facility
   c. the roles of the exceptional child teacher, therapist and aide are clearly understood by staff and administrators
   d. provision is made for pre and inservice opportunities to explore the human dynamics of team relationships
7. The necessity of specific cautionary criteria for the inclusion of exceptional children in the open middle school:
   a. most deaf children should not be housed in an open middle school
   b. for socially maladjusted children the middle school should be the terminal point for formal academics and they should be phased into a work study program at age thirteen
   c. the emotionally disturbed members of the Negative III Group are those children who are well enough to benefit from public school education with supportive therapy. They will rely heavily upon the resource room from/into which they can be phased, or phase themselves.
   d. the teacher of the emotionally disturbed must have:

      available services from psychiatric, medical, psychological, guidance, social worker, supervisory, and administrative personnel, aide assistance
8. The concern of educators for the "inbetweeness," or transescent characteristics of the 10-14 year old which created the open middle school concept must remain a concern that will express itself as a constant reminder that this organizational plan is child-centered. The seeming economics of saved wall space, teacher-pupil ratios; and the Hawthorne effect of being caught up in what's new and innovative are dust motes which tend to obscure the view of the educational scene.

APPENDIX

ISSUES

Dr. Landis M. Stetler
Department of Education
Education for Exceptional Children

I welcome the pleasure to meet with you this evening and give a brief talk on issues in special education as it relates to the open middle school – the topic of your institute during these next four days. I will have to be brief because I don't know that I have that much to add to what you already have covered, since Mrs. Fahrney has sent you very extensive information from a variety of sources.

To take a look at the open middle school, I would like to break these into two components, because I feel that there are not many issues that are involved in the middle school. It simply is regrouping of grades, and since the middle school tends to vary from school system to school system and even from area to area, it apparently isn't based on very specific evidence, but it does tend to at least bring in the sixth grade, along with the seventh and eighth and sometimes even the fifth grade. This regrouping is not an issue. It gives leaders something to talk about around the country and collect honorariums and discuss how many places have middle schools and what grades they are. By spending time on structure, one does not need to concern himself about the real important issue of education, which is how do we specifically improve instruction.

Secondly, this often throws the ninth grade into what we call the high school, and this gives the athletic coaches an extra year to develop their athletic teams and the band and the glee club all have an extra year with their pupils, and so it has many advantages.

But, to be serious for a minute, if it does anything, it has given cause for study. We're finding more and more people taking a look at this particular age group of children than ever before. This particular meeting here today is going to provide you with an opportunity to go into depth in understanding this particular age group of children and hopefully help improve the educational programming for them. I only hope that we go the next step beyond looking at who they are and their problems, and try to decide how we can program for them to improve instruction in our schools.

The issue which I think becomes more significant for special education, is the concept of the open school. And it's really more broad than simply the middle school, for it reaches back to the elementary school also. There's little, if any, evidence in terms of improved performance of children to show that the open school is improving instruction. We talk about additional opportunities for flexibility and so forth, and this may be. But, as our schools are moving toward the open school concept, special education teachers are being assigned to the open school and so we need to examine what our role may be in this type of setting.

We need to go back and examine what is special education. Why have it? Well, there is a certain group of children who need more adaptations than even the average school program has been able to provide up until this time. These adaptations fall into three general areas. Namely, curriculum, methodology, and educational management.

In the area of curriculum, we find that there are a group of children who just do not have enough capacity for one reason or another to gain significantly from the content being covered by the curriculum of the average school program. We can relate it to our limited financial resources. My neighbor may have quite a bit more money than I have, and therefore, he can go out to dinner to fancy restaurants several nights a week, he can take long trips, and he can buy a big car, because he has the extra funds to do this. But, my funds are limited and so I have to be careful to make sure that I use my funds for the essentials of life. So, I have a smaller car, I don't travel quite as much, I don't go out to eat quite as often, and so forth. And, I think it's simply this matter in terms of curriculum adaptation for many of our exceptional children. They don't have the capacity to know the coins of India and to study Japan . . . they need to use the intellectual resources they have to study and learn what they need to know to function in the society of their immediate environment and if they're going to spend a lot of time on all of these things that they will never come into contact with, one questions whether this is appropriate use of the limited resources they have.

In the area of methodology, we find children who just cannot learn in the way that most of the regular classroom teachers teach because of a variety of types of learning problems – either because they have too large a group or because they haven't been taught some of the more adaptive methods of instruction. Nobody's being critical, it's simply that because of time or larger classes or training, some teachers do not have the instructional techniques to meet the needs of this particular group of children. Some obvious learning problem, like a child being blind or deaf, requires specialized instructional techniques, or a child who has some other type of specific learning problem that is less obvious. So, we need to have the teachers who can communicate with this group of children who have this special type of instructional techniques at their fingertips.

And thirdly, there is educational management. The child who cannot tolerate the usual classroom environment, who either disrupts the other children or the other children disrupt him to the point that he cannot or the class cannot function appropriately. For a part or all of the school day, he needs more specific educational management in terms of the environment in which the education program is being provided. In order to meet the instructional needs, we have set up what we call special education programs which have teachers trained to meet these needs and usually provide flexibility in programming that lends itself to these adaptations in curriculum, methodology, and educational management.

From the national scene, one of the concerns is the talk of getting away from the categories and in our professional preparation, we hear people saying, "You don't need to train teachers of the deaf or teachers of the blind or teachers of children with speech problems, but we just train one big happy group." And, I hope that these people are not taken seriously. It's another guise to get away from getting into depth and knowledge of how to teach children.

I happened to be in a meeting not too long ago where a learned professor spoke at great length about how we need to get away from the categories because they're out and we don't have this problem any more. As we got down to the business of planning educational facilities, which was the purpose of the conference, somebody asked a question and he said, "Well, are you talking about educable or trainable mentally retarded children?" So, I think we need to look at it this way – that we do not categorize children, but we do categorize programs to say that the teachers are trained and prepared best to provide a certain type of instructional program. And, we need to identify children's instructional needs and pair them with the teacher with appropriate techniques. Now, I suspect that this is being looked at somewhat backwards, but this is the way it seems we need to be directing our efforts.

Now, let's take a look at open school flexibility and the relation to special education. I'm not talking about an open school with a separate room over here for special education programs. This is not necessarily special education in an open school, in my opinion. We're talking about where the special education program is an integral part of the total school program.

One of the things that we're finding in our few contacts with open schools is that more kids are beginning to surface that need help in special education. I think we have to realize that we have children who have problems in hyper-activity. These are kids who have got to be moving and who are active and who can't settle in for the day. In an open school concept, you can't have children who are up and around as much as you have in a smaller classroom. We also have children who have a forced response to stimuli. They've got to attend to things that are going on whether it's sound or movement, or color, or what have you. They can't concentrate on the things at hand to the degree of most children.

Thirdly, we have children who react to spaciousness. They simply need a smaller area. We've known from research with the Strauss and Lehtinen and Cruickshank and others, that there is a significant factor here in that certain kids have to become hyper-active and react after being in a spacious area. And, so we have contained them in a smaller environment in order for them to function.

And fourthly, the idea of attending to materials. With a limited degree of time that he can spend on any one unit of work, it necessitates a constant change of the focus of the learning direction. Now, we have had children like this in special education for years, but these are the severe problems. And, it's beginning to appear that many of the children with minor problems that got along in the classroom before, in the open school are now coming to the surface.

So, we are seeing maybe twice as many children referred to special education than would have been in the more traditional type of school. Now, we're not saying this is bad. It simply creates a problem and you have twice as many children who need help in special education. It may be that these children were not functioning up to par before, but since they were no particular problem, they were overlooked. But, I think we have to recognize that in most of these schools at the present time, the fact that more of them are being referred is quite common. Possibly, however, as we continue to improve on individualized instruction, that the general education programs will be able to provide for more and more of these and we'll go back and settle down back where we were before.

I think the question we have here is how much of this is a special education responsibility. As I mentioned, we are getting a lot more children than we had planned programs for. We're a little bit jealous of the funds that we've worked so hard to get for special education and we are concerned that the bottom group of children and the extreme top of children are provided for. For this reason, we get concerned about dissipating the energies of the special education teacher in many school programs. I think the idea in Title I of providing for the disadvantaged children is an excellent example of what I am talking about. Funds were provided for the child we were calling slow learning children. These funds were dissipated back into the general education program because there wasn't enough concern about working with this type child. This is the same kind of child that's beginning to be programmed now. Can special education be expected to get involved with all these? There are, some say, as many as 25% fewer children who are participating in the twelfth grade than started in the first grade. And so they are kids who have problems and somebody has to help them. Now, can the individualized instruction of the open school meet this need? Or must special education be moved to take more of these children? What role can we play? How can we do it? These are the things which we need to look for. We desire flexibility and yet we don't care to get so flexible that the efforts of our teachers and the funds of this program are dissipated just to give more to the average group of children. This has been the case in our experiences so far.

We are extremely flexible in this state in the way in which our special education program operates. We can have full-time classes, we can have resource rooms, we can have itinerant teachers, our teachers can provide consultant services to regular teachers – it's one of the most flexible programs in any state in the country. And for this reason, it's awfully difficult for us to keep track of it and make sure that we are functioning appropriately in the role that is set for us. I think the question is, where is the line drawn when a child needs help in special education and where he should be able to be provided for in an individualized program in general education.

So, I think we have the significant role here, we can't have the special education teacher be just somebody who helps everybody who needs help. So we're asking, what is special education's role in meeting the instructional needs of all children? Where is that line drawn? Where does special education begin to phase into the program? Must we continue to label and stamp special education children to be assured that those who have need for special instructional programs will get it, or can we reach a time when we have the flexibility to work with the kids that we need to work with and not work with the children that we should not be working with and do this as a school building program without all of the organizational structure that we have to have now to assure protection of the children for whom we have a responsibility?

Secondly, can't we play a significant role in the open school without being rigidly structured to either openness or self-containment? People say, oh, you're in special classes, you're so rigid. Well, there's just as much rigidity in the person who says, oh, we must have openness and everybody must be out in a big space. But, it seems to me that now we need to look at both sides. Are there not certain children who need to be taken out of this open space and moved over here? So, we need to have both kinds of environments, I think, and the teacher

needs to be able to operate in both kinds of settings. We must decide how this can be organized to function properly. So, we say, how can the special education teacher of the various program areas (the deaf, the retarded, the emotionally disturbed) best meet the instruction aids of the child who needs extreme adaptations in curriculum, method, or environmental management, and be an integral part of the open middle school. It is a problem that we constantly wrestle with. We have been in discussion with a number of people in open schools and some seem to stick to the traditional, others would like to try out everything to improve children's learning. We feel we have a role and we hope that during these four days, you can help us identify this role as we move forward in extending this program statewide.

Thank you and I wish you luck as you deliberate in these next four days.

A SCHOOL FOR TRANSESCENTS

Mary F. Compton
University of Georgia

During the summer of 1965, seven people, three University of Florida professors and four doctoral students, undertook the preparation of a research proposal for the evaluation of middle schools in three school districts: Dade County, Florida; Montgomery County, Maryland; and Atlanta, Georgia. We had a major concern — that these schools be designed specifically for youngsters from ten to fourteen years of age. This group has been known by various names, the most recent of which is "transescent," a term coined by Donald Eichhorn. One of the products of some of us who worked together that summer in 1965 was a book in which we attempted to describe what we believed were the what, why, and how of the middle school. I had some misgivings about the title, **The Emergent Middle School,** because I felt it was too optimistic. After all, at that time, we had no benchmark data that there was acceptance of this school. I look back in amazement at my naivety. The middle school is not only an accepted segment of the school ladder, its growth is phenomenal, and it is, indeed, emerging as a promising alternative to the status quo.

Growth of the Middle School

In 1966, William Cuff conducted the first nationwide survey of middle schools and reported a total of 499. William Alexander in 1967 identified 1,101 in the 48 contiguous states. Today, no one knows how many there are. From state department of education data from three of our southeastern states — South Carolina, Georgia, and Florida — the tremendous growth of public middle schools can be demonstrated. Two years ago, there were 10 in Florida; today there are 59. South Carolina reported 6 in 1967. This past school year, there were more than 30 in operation in the state, and next year more than 100 will be added to the roll. Georgia reports 28 presently in operation. A dozen more of which I have personal knowledge will open in September, and at least 10 more are under construction with opening dates scheduled for 1971. Many private schools are operating middle schools which are not included in state department data.

With its growth in popularity, there has been an accompanying increase in the volume of literature published on the topic. When the faculty-student group began its work in 1965, we were hard-pressed to find periodical information (much less, books) about the middle school. Now, five years later, it is a Herculean task to attempt to keep abreast of the literature.

The University of Florida and the University of Georgia are two of the many institutions offering graduate courses in middle school education. State departments in these two states are moving rapidly toward teacher certification. The University of Georgia now has an undergraduate teacher education program for middle school teachers, leading to a bachelor of science degree.

The Southern Association of Colleges and Schools has, through its elementary and secondary sections, established a committee which will focus on the provision of programs for late childhood and early adolescence. Efforts are being made, at present, through the state committees to identify innovative programs and to disseminate information about such programs and to disseminate information about such programs to the member states.

There is, then, evidence not only of middle schools' growth but of its acceptance by state departments of education and accrediting bodies and, also, of the increased attention by professional organizations and commercial publishers.

Why the Middle School?

There are many reasons for the establishment of the middle school. Many of us point to the inadequacies of the upper elementary and junior high school programs in fulfilling the needs of the transescent. Some middle schools have been established in order to justify new buildings, to relieve overcrowded conditions in existing buildings, or to provide a setting for a tryout of the various curricular and/or organizational innovations. An honest admission on the part of many school districts would reveal that the establishment of middle schools appears to be a means of satisfying the federal government and its desegregation guidelines.

There seems to be a great deal of confusion in answering the question, "What is a middle school?" My definition of the middle school requires a separate organization from elementary and high schools and includes at least the age groups usually found in grades 6 and 7. In addition to these two essential age groups, I would add at least one more, so that there would be at least three years of schooling — but no more than five — in the vertical organization. With less than three years, a "revolving door" situation exists — one group is just entering; the other, preparing to exit. A majority of middle schools include grades 6-8, but other combinations include grades 5-8, 4-7, 5-9, and 6-9.

Although grade levels have been the basis for identification, this criterion does not suffice to distinguish **true** middle schools from other types of organization. There must be a new kind of program, one designed for the special age group of children to be served, not a transplanted elementary or junior high school program. It must be unique for this unique age group. Without this underlying characteristic, we are merely perpetuating a commitment gap which seems to be a phenomenon of twentieth-century America. There is a perceivable gap between what we know we should be doing (and often say we are doing) and what we actually practice in the classroom. This commitment gap seems to vary in width from one organizational level to another and within teaching fields. The breach is probably greatest in higher education (especially in teacher education) and most narrow in exceptional child education, a field in which the recognition of individual differences has necessitated program flexibility.

A unique program should be implemented by a unique breed of teachers. Of utmost importance is a genuine liking for youngsters during these intriguing, but trying, years. Without this, any ambitious list of characteristics would be impractical. This liking should be accompanied by an understanding of the learner at this stage of de-

velopment, a sense of humor, fairness, knowledge of a teaching field and methods of helping youngsters learn, the ability to integrate subject fields, flexibility, sensitivity, and an openness of mind to new ideas and the courage to try things that may not be in vogue. Hopefully, the staff will be composed of masculine and feminine models – with a generous sprinkling of each.

The Transescent

Approaching the ultimate in "missions impossible" is the attempt to describe the transescent. The major characteristic of youngsters during these years is their variation. They differ greatly from one another and within themselves. Quite often, they vary in many respects from one day to the next. It's this group who must be the basis for the middle school if it is to make an impact on American education. If we focus on each youngster, we must divert our attention from masses of youngsters and recognize that the basic teaching unit is one – the individual child. We will then build a program which fits the child and refrain from attempting to cram each child into a predetermined mold shaped by a rigid program. It is no more possible to succeed in shaping children into uniform human beings than it is to fit every adult female form into a single-sized foundation garment.

What kinds of youngsters are transescents? The best approach at description may be through broad categories of development. It must be kept in mind, however, that each of us is more than a sum of our characteristics and that there is no fixed age at which the various kinds of development occur. There is, for example, no such thing as a "typical" twelve-year-old. Two of these characteristics are physical and intellectual development.

Physical Development

By far the most conspicuous changes during the years of transescence are those which are physical in nature. I would challenge anyone to visit a school enrolling ten- to fourteen-year-olds and to select with a high degree of accuracy those who are twelve years old. Physical changes occur for different youngsters at different ages. Some will not experience these changes during these years, but most will begin transition prior to matriculation in high school. For some, the transition will begin during the eleventh or twelfth years of life. The physical change which is most noticeable is a tremendous growth spurt, which is usually at its peak during a period of a year to a year and a half, but which may require as long as three years for completion.

Specialists in adolescent medicine state that changes occur gradually and in various parts of the body at different times. The first of these changes is in leg length, and youngsters may gain as much as eight inches in height during this three-year period. Since girls are generally two years ahead of boys in development, and, therefore, begin this growth spurt earlier, they tower over the boys in height. At the age of nine, there may be a range in height of five inches between the tallest girl and the shortest boy. By the age of fourteen, the range may be as much as eight inches. Increase in leg length is followed by an increase in hip width, and the child whose figure may have resembled a stick may begin to develop a more angular or a more curvacious form. The next change is in chest depth, weight, and strength. The latter three changes, along with the deepening of the voice and, in boys, the appearance of whiskers, occur in the final phase of the cycle.

Youngsters have an awkward and gawky appearance during these years. They have difficulty managing their growing and changing bodies. They step on their own feet – and on your feet, if they get in the way. They outgrow clothes rapidly. They are extremely restless at times and listless at others, and they require frequent changes of pace.

Growth of the nose, ears, and lower jaw to adult size make transescents less attractive than they may have been as young children. This less attractive physical appearance, accompanied by the difficulty of managing a changing body, is made even less acceptable to the youngsters by the image the mass media seem to be telling him he should emulate. If one spends an evening watching television, he may be struck by the emphasis on physical beauty. The programs and commercials display the well-developed adult form in bathing suits, relaxing on the family patio, riding a motorcycle through the countryside, or even singing and dancing in the ruins of an ancient Mayan temple. The commercial "messages" tell them that if they use the right toothpaste, breath mint, or mouthwash, chew the right gum, bleach their hair, spray with the right deodorant, eat the right cereal, and drink a diet drink for lunch, theirs will be the good life. Rarely does one see this age group portrayed by actors who are transescents, because their physical appearance and their motor skills leave much to be desired. If one is old enough to remember Little Miss Marker and The Kid, he'll recall that even they disappeared from the "silver screen" during the years of transescence. The emphasis on the physical ideal adds stress to youngsters who already feel anxious about their appearance.

There is a rise in blood pressure and a decrease in heart rate during these years. An increase in blood sugar may cause an aversion to eating breakfast. Much of the growth takes place in the spring, when youngsters are likely to be most active physically. The growth of bones and tissue, increased demands on the heart, and an acute sense of physical inadequacy should be taken into consideration by those responsible for physical education programs with emphasis on interscholastic sports and a need for winning and by those who advocate strenuous physical activities.

Are these changes taking place earlier now than at the time of the establishment of the junior high school in 1900-1910? Again, we can turn to the medical profession for the answer. Many specialists in adolescence medicine accept the highly controversial study by James Tanner and reported in his book, **Growth at Adolescence.** Physicians state that, as Tanner's study indicates, the onset of puberty is occurring three months earlier each decade. This means, then, that during the sixty years since the establishment of the junior high school, the age of the onset of puberty has decreased by eighteen months. A program which may have been acceptable in 1909 is not appropriate for 1970.

Intellectual Development

Another type of change which should be of concern to those who work and live with transescents is that of intellectual development. Probably the most helpful information we have concerning this type of change has come about as the result of the work of Jean Piaget and the psychologists who have attempted to validate his theories. Any brief discussion of intellectual change is, of necessity, an over-simplification. Younger children in the elementary school are usually more dependent on the concrete – the here and now – the things they can see, hear, taste, smell, or touch than are the children

upon whom we are focusing. At about the time of transescence, the child begins to use a different mode of intellectual functioning. Through symbol systems, especially language, the youngsters can begin to deal with more abstract kinds of material – that which deals with possibilities. He can begin to hypothesize and to put these hypotheses to a test, selecting those which are acceptable. He can follow a series of events to a consequence, and he can begin to reverse his thinking. For example, he can tell us that 9 times 9 is 81, but he will also begin to see that the square root of 81 is 9. Using an example from another subject area, a series of events will be perceived as resulting in some consequence, and the youngster will begin to be able to see that a change in any event could change the ultimate result. He will be able to deal with questions such as, "What would happen if electricity suddenly disappeared from the earth?"

Youngsters during transescence are capable of taking much more responsibility for their own learning – if given the opportunity to do so. They need experience with kinds of thinking other than memory and convergent thinking, which are the usual kinds of intellectual activity we ask them to exercise in school. They should be given greater opportunity to exercise divergent thinking. We, as teachers, need to pose questions such as that above and to step aside so that youngsters can learn to think for themselves. Isn't this a major goal of education?

THE FLEXIBLE PROGRAM AND FACILITY

The Open-Space School

A school for transescents should have one major characteristic – flexibility. These youngsters are so very different from younger children and the full-fledged adolescent that a program designed for older or younger children is inappropriate. There must be sufficient flexibility in the program to insure the opportunity for learning experiences to be designed for individual transescents. This requires flexibility of space and schedule as well as an expansion of redesigning of course offerings. Flexibility requires the use of various sized groups—large groups and small groups—and no groups at all (independent study). This variation in group size is difficult, if not impossible, in a series of classroom boxes. Flexible programs are probably easiest to implement in large spaces which can be temporarily subdivided as the need arises.

The open-space school is steadily gaining in popularity. It has many faces, with at least one common attribute – few permanent interior walls. These schools may be completely open with no interior walls, as is the Bradford Middle School in Starke, Florida. Another type utilizes a portion of the building as a completely open space, as is the plan at Drew Junior High School in Miami with its loft. Still another variation utilizes temporary dividers between spaces usually assigned to two, three, four, or five classrooms. Examples of the latter can be found in many schools.

The open-space plan has many advantages. Because finances are always taken into consideration, school people often point to the alleviation of the expense of interior walls and corridors. Another financial consideration is its longevity in the face of rigid curricular and instructional change. A major advantage is its flexibility. Consider, for example, an open pod which houses 100 twelve-year-olds. Without permanent interior walls, a large space is available for team teaching which can be subdivided by the use of movable shelving, bulletin boards, and/or chalkboards into spaces for 50, 25, 15 or 5 youngsters. The open space brings teachers into closer proximity and necessitates teacher planning and co-operative teaching. It also provides the opportunity for the neophyte to learn from experienced teachers housed within the same teaching area.

Youngsters can move easily from one teaching area to another without having to enter corridors. The various instructional media are more readily available in the open-space school. It would be almost impossible for most schools to provide a 16 mm film projector for every two classrooms – much less for every teacher. In a shared open space housing an equivalent of the enrollment of four traditional classes, a 16 mm projector can be readily available without the loss of time in moving it from a central location in the building to the classroom in which it is needed. Some open-space schools, such as Bradford Middle School, plan the instructional materials center for the center of the open space; others house it in a separate facility located centrally between pods.

This type of school is ideally suited for team teaching. It has also been successfully utilized for self-contained, core, departmental, seminar, independent study, and non-graded organizational plans.

Many of the disadvantages arise not from the open-space idea per se but from an absence of certain essential accourterments. Noise is designed for an appropriate level of sound projection. Some teachers feel that youngsters are easily distracted visually. This may be overcome by vision barriers such as movable partitions. If an interesting activity is taking place within the teaching area, youngsters are oblivious to external distractions. Teachers may have some difficulty adjusting to the open-space plan, and, for this reason, assignment of staff should probably be on a volunteer basis.

The Flexible Program

Is the open-space plan practical for the transescent? Emphatically, yes! It is also appropriate for all other levels of education. Refer again to those characteristics of transescents cited earlier and apply them to the curriculum. Transescents are uncooperative in the matter of development – they refuse to grow up all of one piece. Instead, their physical development, intellectual development, and emotional development are at varying stages – as is their ability within subject areas. The open-space school provides the setting for frequent regrouping according to achievement in the various subject areas, maturation, and/or interests. Because their ability in reading, for example, is below the grade norm, there is no reason that they must stay with a group of slow readers all day.

Teachers should be given the opportunity to work in a subject area in which they have the greatest interest and competence. Call it departmentalization, if you care to, but I prefer to think of it as integration of subject areas. An example may clarify what I mean. A fifth grade group is studying Colonial America. Various teachers may work with this group on such topics as environment, nutrition, communication, economics, civics, mathematics, art, music, literature, home living, recreation, transportation, and agriculture as they relate to Colonial America and to the United States in 1970. Such an enterprise would call upon the subject area strengths of several teachers, working, planning, teaching, and evaluating together – a togetherness not usually apparent in struct departmentalization. Youngsters work with several teach-

ers within one large teaching space. Transescents are not as dependent on some one adult as are younger children, they enjoy variety, and they can benefit from instruction by subject specialists. A youngster's problem of which one teacher may be unaware may be detected by another, who can help each of his teachers make provisions to remedy his difficulty. If he needs to remain longer in one teaching area than do other children, he may do so. When he is ready to move into another kind of activity, he can do so easily. Personality conflicts between transescents and their teachers may diminish in severity when the youngster has contact with a variety of adults rather than being confined to the classroom of one teacher.

The open-space school does not guarantee individualized instruction to any greater degree than does the classroom box. One requirement for this type of non-grouping to succeed is a focus on adult/child ratio rather than on the teacher/pupil ratio. The former includes teacher aides and other para-professionals. A second essential ingredient is the utilization of a variety of teacher-surrogates (such as single-concept film loops, video tapes, live television broadcasts, audio tapes, and computer-assisted instruction) which can aid the youngster in learning at his own pace.

SUMMARY

Here, then are some of the reasons an open-space school is particularly suitable for the middle years. It is flexible for grouping, scheduling, and instruction. It brings together youngsters who vary greatly in development but who share many interests and abilities. It provides the best of two worlds – being part of a large group and being treated as an individual. It makes available a setting whereby teachers can work co-operatively to plan a program suited to the youngster rather than one which is predetermined by textbooks, curriculum guides, or accreditation bodies. The flexibility and openness provide an opportunity for the youngster to work in groups of varying sizes or on his own toward the product most of us desire for the middle school – the self-directed learner who can assume an increasing degree of responsibility for his own learning now and in the years to come.

LEARNING AND EMOTIONAL NEEDS IMPLICATIONS FOR EDUCATORS

Pearline Peters Yeatts
College of Education **University of Georgia**

I will attempt to introduce you to a frame of reference for viewing the teaching-learning process. It is not my intention to give you a model, but to give you the tools necessary for structuring your own model.

The future of man is always in process . . . always changing . . . always becoming. The number of alternatives is almost infinite, yet this has been the most destructive decade of the bloodiest century of man. Our generation has discovered more knowledge about the nature of the learner than have all the preceding generations, and likewise, this same generation has slain more men, and destroyed more materials than have all the previous generations.

Those of us in the "helping professions," who have expounded theories of learning, share responsibility for the present state of man. We have for generations been glad to proclaim our wisdom in the guidance of human behavior. Do we now have the humility to evaluate, see and confess our errors? Are we willing to join forces with all members of the "helping professions" to provide the environmental conditions necessary for developing the kinds of people who respect self and all mankind . . . people who are constructive, rather than destructive.

ASSUMPTIONS: NATURE OF THE LEARNER

The view the teacher holds concerning the nature of the child will determine the experiences provided him and the approach taken in providing the experiences. During the last two decades, major American researchers and theorists such as Jerome Bruner, A. A. Combs, Ira Gordon, J. McV. Hunt, and B. White have explored the role of experience in development. These researchers suggest that growth is determined by the quality and quantity of the transactions of the organism and the environment. The author of this paper views the child as a dynamic, evolving complex system comprised of the transactions encountered by the organism and his environment (the culture, objects and things, and the way the child views himself). All of these aspects function as an interrelated unit, and cannot be segmented.

This transactional approach to development assumes that man is changeable instead of "fixed." Bloom (1964) supports this position in finding that although the personality stabilizes during the first five years of life, the individual shows considerable variability into adolescence. The behavior of an individual is a function of his experiences, how he represents his experiences, and how he organizes them for future use. The external stimuli are not relevant until they have acquired internal meaning; the event exists only in relation to the person. More important than storing past experiences in memory is retrieving those which are relevant in a usable form.

In the process of **transaction,** a stage of development constitutes a mere measure of the individual's functioning at a given time. As a transactional situation, the class is comprised of the learner, the teacher, the material to be learned, and the learning environment. One cannot be understood in isolation from the others.

The human being functions, then, as a whole. He is physical, social, and intellectual at all times and all places. The child seeks change but at the same time demands stability. He is both product and process, always striving for equilibrium, while at the same time seeking novel experiences and new information which will insure disequilibrium. This change from equilibrium to disequilibrium provides opportunities for further individual development.

Gordon (1966) has compared man's intellectual system to a computer. The human brain and nervous system, unlike the computer, however, can act to generate self-growth and self-maintenance. This ability provides many possibilities for growth in thinking, reasoning, and problem-solving abilities.

Building and being a part of a learning environment which stimulates the thinking, reasoning, and problem-solving abilities is the supreme challenge which faces every teacher. It is apparent that teaching is a complex, complicated process. However, it is necessary for teachers to understand "who children are" in order to perform effectively as instructors. The following assumptions concerning the nature of the learner are offered as a basis for organizing instructional activities and procedures:

- The human being is a dynamic open-energy system
  - Individuals are always in process
  - Man is able to be self-directive
  - The individual behaves as a unitary whole
- Each individual is worthy of dignity and self-respect
  - People are more valuable than things
  - Man is more helping than hindering
- Behavior is caused and meaningful
  - Behavior is due to multiple causation
  - Behavior is due to internal frame of reference
  - Behavior has immediate causation
- Individuals are unique yet similar

Open-Energy System. The human being, a dynamic open-energy system, has self-awareness and concepts of self and others which are always interacting to direct his interactions with society. The "being" has the potential, when free, to go beyond its present state and to help plan and structure its own destiny. **Individuals are always in the process of becoming,** always changing. The person is constantly aware that he is an on-going part of the world. It is, therefore, possible to provide experiences conducive for growth and changing behaviors. If given the time and opportunities, the individual who is not co-ordinated may become a top athlete. Just as 19th century man did not envision a trip to the moon, the child who does not envision himself as a performer will choose to set and not perform. If he is put in performing situations where he is consistently successful, he will learn to see himself as a performer, and will choose to perform. These experiences must, however, be his own. He does not learn that he can from being told that he can, but from experiencing many successes (ASCD Yearbook, 1962).

Man is able to be self-directive. The teacher helps each individual find the alternatives from which to select in enhancing his own growth, but each person can, when provided adequate alternatives, choose for himself. This process of self-direction can occur only as the individual

participates in the life of his group. As the group and the teacher plan activities, it is necessary for the teacher to determine many activities, at varying skill levels, which will fulfill a concern or need. For example, if the teacher is concerned with developing the understandings and abilities involved in the concept of original, she thinks of many activities which move the student toward this goal, and from the several he chooses, those which best ascribe to his own needs.

The individual will not become self-directive until he transcends his social determinants and becomes conscious of his responsibilities as a choosing agent. He has to be allowed and encouraged to remain in the choosers seat as he evaluates and revokes his own decisions as to what was best. In the process of choosing from the alternatives, the individual arrives at self-awareness not previously understood. He becomes an individual, or more importantly, through selecting his own way from life's alternatives, he arrives as a person.

The individual behaves as a unitary whole. When the child encounters a problem, he engages with his emotions, his intellect and his physical self. For example, a small and unskilled fifth grade boy found no success in the physical education classes. The teacher spent much of his time reprimanding the boy's behavior. The child's emotions were directly associated with his physical limitations.

It would appear to be evident that anything that effects the human organism in which the process of perceiving occurs also effects the awareness and understandings of the event. We have only to see those who are blind (or deaf) to understand the limitations imposed on one when vital organs are impaired. Simply having the necessary facilities for seeing does not, however, determine what will be seen. As the bat comes back, the catcher may be missed by no more than a fraction of an inch. For the observor, this may be dangerous, but for the catcher, a "near miss" is as good as a mile.

Certainly the child who has not developed his senses, or one who has impaired sensory equipment, will not be able to differentiate as efficiently or as effectively as one with highly developed sense awareness might. Studies of "genius" illustrate that children who perform in a superior way in intellectual functions are also superior in physical traits. For example, children who are deprived may only be able to focus their attention on deprivation, thus blocking experiences which appear to be in their environment.

Investigations by Yeatts (1967) have illustrated that the way one feels about the physical self enters into every phase of social, physical, and intellectual endeavors. If one sees himself unattractive physically, it effects what he does in "academic" pursuits, as well as in his interpersonal experiences.

Dignity and Self-Respect. Each individual is worthy of dignity and self-respect. This assumption requires that each individual be viewed with respect and that each person be accepted on this principle. The individual cannot respect others unless he has been respected himself. He learns to respect himself and his abilities through participating in activities where his concerns and interests are considered and sees as valuable.

Objects, materials and other items are things to be used for human growth. They should be used for that purpose rather than as an end in themselves. People are more valuable than things. The teacher who sees the child as more valuable than things is consistently engaged in the unique art of creating persons. The relationship between the student and teacher is that of person to person rather than person to thing. The relationship is one of mutual concern based upon the recognition of unique elements of the other person.

Teachers constantly strive to elicit this creative character by honoring individual "life styles," while at the same time attempting to help students understand and recognize those harmful to and capable of disintegrating growth, a liability to himself and others.

If a child does not feel adequate in a specific situation, the teacher should try to understand why and attempt to provide activities which enhance, rather than degrade, the child's view of self.

Individuals pursue goals which are not only helpful to self, but are also helpful to others. They do not seek to hinder the growth of others if they are free to develop their own abilities. A group of second grade children were often seen helping each other. An observer could hear such comments as, "Oh, Susie, that's good. I'm happy for you." The same kind of support and encouragement was also observable in the teachers of these children. Man is more helping than hindering. Teachers have many occasions to observe individuals in the helping relationship. Individual freedom represents a focal point of tension between the individual and the group. As the individual works to perfect his own skills, he turns to others for help. The individual is always seeking to improve. As he receives help, he gives help.

As he becomes aware that as others improve, the opportunities of a better game increase, he eagerly assists others. He actually identifies with others and, therefore, the knowledge and skills acquired through reflection will be mastered and shared with others as he utilizes his native aptitude and his personal experiences.

It is through this person-helping relationship that the individual confronts real life. The human being is not static; he is never being, but always becoming. Even as the young fail, they are aware that man's fulfillment does not lie in failure. The ideal being is never finished. It is rather, as Dewey stated, always an orientation, working through a never-finished series of ends-in-view.

Behavior Causation. Behavior is caused and meaningful. The child's behavior is purposive and is a result of the view he holds of the impringing internal and external forces. At the moment of action, the behavior appears to be the best alternative.

The forces which cause behavior are not single; behavior is due to a multiple **causation.** While causes can often be identified specifically as physical, cultural, perceptual, and peer influence, others are composites of many or all of these.

Behavior results from an internal frame of reference. The child behaves according to how the situation looks to him, not how it looks to an outsider. He behaves from a sensing, feeling, thinking, subjective frame of reference, rather than from an external, objective reference. The individual will do whatever is necessary to preserve his own need for adequacy (Combs and Snygg, 1959). A faculty had difficulty understanding why a seventh grade boy had a bowel movement in the center circle of the school's varsity basketball court. A sensitive teacher observed that the child saw himself as unable to cope with school; he was never recognized as a successful performer. If opportunities to verify his adequacies in constructive ways are not provided, he will find ways — even those distasteful to the teacher — to gain recognition from others.

We do not know the maximum limits of behavior. We do know that efficient and effective behavior for one may not be for another. Only the individual can

determine – but by understanding how he perceives the situation, the teacher can understand why his behavior was as it was.

The child behaves according to how it seems to him at the moment – **behavior has immediate causation.** The teacher, then, has to understand the immediate feelings and beliefs. A personal behavior is the result of the kinds of experiences individual children have, and of how they perceive themselves and the situation at that moment. If we find out how a child views the situation, the environment and, therefore, his experiences can be manipulated, new learning opportunities become available.

Uniqueness and Similarity. Individuals are unique, yet at the same time, similar. This uniqueness is not only genetic, but is also experiential and perceptual. Each person should be understood from his own perceptual field (the way the situation seems to him); his uniqueness provides the basis for imaginative creative pursuits.

Although the individual is unique, he is, at the same time, similar to other children who have grown up in the same culture. He, like all children, has the basic need to maintain and enhance self (Combs and Snygg, 1959). This similarity allows for common concerns and interests of children at a given time.

People have many common experiences, (communicating with others), but each individual traverses his own unique path in the march toward humanness, deviating creativity from his position, thinking private thoughts and exploring in such ways that he discovers for himself. Yet, he returns to his group thereby sharing with them many of his private excursions. As he shares with others, they, in turn, share with him, thereby enriching him and forming a common bond. It is around such a bond that teachers can plan activities appropriate for a group of children. A third grade teacher found that an uncoordinated boy was excellent at planning group strategy and new games. She used these skills and found that the better skilled boys were eager to have him on their team. Since Tim was a welcome member of the team, he participated every day and his fourth grade teacher found him not only a "strategy maker," but a better player.

The teacher, then, is concerned with preserving the uniqueness, while simultaneously utilizing the uniqueness as a tool for more effective group memberships. It is this uniqueness that results in how the individual perceives a situation. Any skill or behavior which appears to the individual to be effective in satisfying his immediate needs will be continued. Each individual needs to learn to work with others in solving problems while at the same time preserving his own selfhood and integrity.

Reflections. These assumptions advance the idea that man is of value and is deserving of human dignity regardless of his background or of the circumstances in which he finds himself. They further advance the notion that man is not only changed by society, but that he interacts with and changes society as well. Because of this interdependence, man is concerned about his own development, but he is at the same time concerned about the development of others. They find that the teacher can look at immediate behavior in terms of the present even though the past experiential base is a crucial contributory factor. Such assumptions constitute the underpinnings for a basic philosophy of development, one useful in the education of growing children.

FORCES CONTRIBUTING TO DEVELOPMENTAL LEVELS

In studying the developmental patterns of the human organism, it is necessary to consider what is known about variables contributing to the total development of man. Although one cannot easily separate the genetic and environmental forces, they will be discussed separately to emphasize the interrelatedness.

Most study in high school biology about man's growth beginning at conception and continuing until death. Such study usually reports about genes carrying that which is called heredity, where many of the parents' characteristics are transmitted to the child. The gene is defined for use as the single basic structure responsibility for heredity. (Genes are composed of long, double strands of DNA (deoxyribonucleic acid), a complex substance which modern researchers describe as the key to heredity. Tanner states that "The order of the DNA units determines the physical characteristics of the organism containing them" (1965, p. 12 . . .). Any characteristics classified as genetic, whether it is physical, emotional, or intellectual, is traced to a specific gene or group of genes. The genes are described as grouped into chromosomes, occurring in pairs. (Winchester states that each human cell contains twenty-three chromosomal pairs). Each child inherits only half of each parent's genes, causing genetic differences even among siblings. Siblings are often, in fact, so different phenotypically as well as genotypically that they cannot be identified as siblings (Stern, 1960). Cells are described as the foundamental units of growth and development – the human body's billions of cells all developing from a single fertilized egg.

As the child develops, he becomes complex – the changes in size, structure, and form comprise what is identified as human development. His development is irreversible. Although the sequence of development appears to be established, the rate of movement varies with each individual, dependent upon his genetic makeup and his experiences. Growth is both vertical and horizontal.

The human organism develops by a metabolic process, from within (Tanner, 1965). The body acts upon many kinds of substances, changing their structure and composition in such ways as is necessary to use them for growth. The body is such an intimate system that man, with all his advanced technology, has not yet produced sufficient tools with which to adequately assess its functions. Even man's most complex computers do not begin to encompass the level of functioning of the human body. Growth, then, is a very complex process.

The ultimate growth of a person is identified by the interaction of heredity and environment. Each person inherits a genetic potential for a specific physique, and the color of his eyes and hair. Whether these potentials reach their optimal development are, however, determined by the environment the individual encounters; factors such as nutrition and stimulation. The environment can encourage or inhibit growth and development; for example, environmental conditions, improved during the centuries, have led to pronounced increases in the height of man. Millions still find their growth potential severely impaired by poor nutrition, and perhaps, poor shelter, which result in diseases and malformations. Although genetic influence on intellectual performance is a general concern to most teachers, the effect of genetic factors on personality is not at all clear. Personality ap-

pears to be less influenced by genetics than are some other traits (Kagen, 1962).

Physical characteristics such as eye and hair color, hair characteristics, physical stature and sex determination have a genetic base. Generally, these facts and understanding comprise our repretoire of information about the role of genetics.

Defenitive studies such as those of Newman, Freeman, and Holzinger (1937) and Jensen (1969) suggest that genetic factors play a large role in determining intellectual performance as measured by test instruments. While it does not require much reflection to recognize that intelligence quotient measures are cultural and not sociological measures, it is likely that the genetic influence on any individual's performance is a complex matter. Some children's I.Q. scores can vary as much as sixty points between six and ten years of age, and it is quite common for scores to vary twenty points. The most sensible conclusion one can reach is that the genetic contribution establishes a range of ability rather than a specific level of performance. Furthermore, it is reasonable to assume from the genetic studies that one inherits potential and the degree to which that potential is developed is due to environmental influences.

ENVIRONMENTAL INFLUENCES

The environment encompasses all the forces, conditions, and external stimuli with which the organism interacts. The stimuli include interactions with people as well as with objects and things. It is neceessary, however, for the individual to be cognizant of and to interact with the impringing stimuli to be a part of the person's environment. Even though the stimuli exist, if the individual does not recognize them, they do not exist to him. The environment is, then, an extending and reinforcing agent with which the organism interacts.

The environment is not the same for different individuals. Therefore, each individual brings into focus and deals with only those environmental possibilities which are congruent with his intellectual, emotional, and physical development.

Environments are as individual and varied as the individuals who devise, comprise, and live with them. And, different people react in different ways to the same environment. Consequently, no one mold or prescription can be considered the ideal environment. However, recent and widely accepted and acclaimed research indicates that an environment which is supportive and self-enhancing provides many more opportunities than does one which is viewed as threatening and non-supportive. The differentiatives the individual makes will be dependent upon his past perceptual opportunities.

Combs and Snygg (1959) identified several factors that determine the experiences that one seeks and encounters: the individual's restriction of field, opportunities, self, time, organism, and the needs.

- "Goals of the individual" – Goals are determined by the opportunities the individual has from which to select in broadening his perceptual awareness.
- "Restriction of field" – If the individual is threatened, he defends himself. His field is therefore narrowed, and he cannot accept the alternatives made available to him.
- "Opportunity" – It is necessary for the individual to be provided rich and varied experiences if he is to have the alternatives necessary for intelligent choices. The fact that one is exposed to an event does not mean that he has been involved with that experience. A child may attend physical education classes for years and never become involved. Our adult population today depicts this fact by the obese and sedentary behaviors. Personal involvement is necessary if the experience is to be significant and is to make a difference.
- "Self" – How the child views himself, his own worth, and capabilities will determine to a large degree those activities he will pursue. The child, for example, who sees himself as unable physically will not believe that he can master a given skill. It is then ridiculous for his to spend hours in practice in an effort to master the skill. On the other hand, the child who sees himself as able will spend the necessary time to master the skill, because he knows he can.
- "Time" – It takes time for one to develop and grow. The richness of perceptual awareness will, therefore, be a function of the amount of time the individual has to explore and be involved in the activity. The individual must be given the necessary time to gestate the information and differentiate the perceptual cues. The time required will differ for individuals.
- "Organism" – Human behavior involves a physical as well as cultural and psychological base. If the organism is suffering from apin, it cannot be open to the available opportunities. It is only when the physical needs have been met that one can attend to the possibilities provided him. The greater the period of time during which the organism is deprived, the more difficult it is for the individual to seek and explore opportunities.
- "Need" – The basic human need is to maintain and enhance self. The individual constantly strives to reach self-realization and will involve himself with those activities which are seen as being relative and significant for him. If he does not see a need to participate in physical activities, he will attempt to avoid them.

The values and attitudes one holds are, also, primarily due to experiential background. They are a result of all the stimulation the child encounters. As one engages in discourse with the family, community, school, and the peer culture, values and attitudes are acquired. They are acquired over a period of time and change slowly.

The development of the physical organism is influenced by environmental conditions. The child may, for example, inherit the genetic potential for a six-foot height, but due to poor nutrition never reach it. He may inherit the potential for a healthy physique, but due to environmental condition have poor vision, hearing, and be very weak.

After careful examination and evaluation of the research reviewed, it does not seem tenable to assume genetic predeterminism or fixed intelligence. J. McV. Hunt (1961) synthesized available information on the effect of genetics and experience on development and reached a similar conclusion. The research of Harlow (1961), Hebb (1954), Riesen (1961), Newell, Shaw and Simon (1962), Pribram (1960), Rogers (1951), and Piaget (1957) supports the importance of experience on development. Further support for the influence of the environment comes from studies involving enriched, normal, and different degrees of impoverished environments. (Sherman and Key, 1932, for example, found that as one progressed into more stimulating environments, children attended school more regularly and intelligence quotients increased.)

NATURE AND NURTURE

It is obviously not easy to determine the specific growth related only to genetic or environmental conditions. The real question is not one of nature (genetic characteristics) or of nurture (environmental influences)

but rather one of the character of their interaction. Nature determines the direction of growth and development, but nurture determines the content of thought. The environment provides nourishment for the growth of mental structures and physical organs. An environment planned for a specific purpose by the teacher can provide optimal opportunities for nourishment in psychological and physical growth.

The child has very different needs and capacities than does the adult, the needs and capacities which are determined at any given moment by inherited characteristics and previous experiences. As the individual utilizes environmental stimuli for his own growth, his growth adapts and modifies itself to the environment. The games a child learns, the language he speaks, and other behavioral patterns are determined by the social and physical milieu in which he finds himself.

Man is an integrated part of his environment. He draws from and contributes to it. This idea offers hope and opportunity for the teacher of socially and culturally disadvantaged children, as well as to the teacher of the advantaged child. The teacher determines where children are functioning, the specific needs they have, and plans specified activities to make the most of inherited qualities in the social environment.

USEFULNESS TO EDUCATORS

What are the implications of this view of learning to educators? First, any accepted model of the nature of the learner will determine how one views the role of the educator. The model presented requires that we see the information as the learner sees it. We must recognize that what we see as important was learned, and may not be the same for others with different experiences. We must, therefore, plan opportunities for responsible discourse with students. We can no longer be concerned only with the product; we must first of all be concerned with the process. How did the student get to the exhibited behavior, not just what is the behavior he exhibits. The teacher must enter into dialogue with the student as a human being . . . eager to know his thoughts, not just for the purpose of imparting information or controlling, but for understanding.

Educators and students must develop understandings of how others feel, of the circumstances that enable all to enhance self for a richness of life. People must learn to be sensitive to people. Whatever nourishes the personality expands its aptitude and broadens the alternatives from which to choose. Thinking leads to action, and life today has problems too complex for the individual to solve alone. Every person responsible for directing the experiences of the young must join forces in providing opportunities for every person to know himself as a needed, worthy participant in the human enterprise. Then and only then will we be able to combat self-destruction.

We have to begin to help students analyze and explore the why of situations. No group is all this way or that way . . . ambiguity is a part of life and with help we can all learn to interpret it in accordance with our own value system. We have to have not only input but output. We must know how the student sees the situation. We have to find ways in which the probability for self-satisfaction is greater than those resulting in undesired behaviors . . . ways that are rewarding to the student personally. After all, learning is personal; it is not some abstract bit of information.

In a more concrete way, I am saying that all educators, not just teachers of the gifted or retarded, must provide information which has personal meaning. The information must fit into the student's experience and enhance his view of self. We must help the student see for himself better ways to meet the gratification need that undesired behaviors have met. But perhaps most of all, we must believe and practice what we preach . . . nothing is worse to a teenager than a hypocrite who is past 30, and one thing we cannot do is to fool a youngster. They read us clearer than words and what we do communicates loud and clear.

We all have a tremendous task. There is no simpler answer, and what is the best approach for one is not necessarily best for another. We can see pay-off, however, if we combine resources. We have the resources . . . do we accept the challenge?

VARIABLES OF INSTRUCTIONAL PROGRAMS CONDUCIVE TO LEARNING FOR THE EXCEPTIONAL PRE-ADOLESCENT

Eleanor C. Guetzloe
University of South Florida

It is a rare and stimulating experience for an emotionally disturbed university instructor to be invited to participate in an institute which might make a decision on any issue such as "an optimal learning environment" for exceptional children. Generally speaking, those of us who work with disturbed children are more than willing to consider, in terms of physical facility, any somewhat enclosed space that partially keeps the rain out and that is bigger than a broom closet; and we have been known to settle for less than that. In terms of the three "levels of contribution," as described by Bednar and Haviland (1969) we rarely allow ourselves the latitude of thinking of anything transcending the "basic level," at which the environment is not in violation of human comfort.

All of you are probably aware of the principle of self-selection which leads children to self-select suitable, appropriate experiences at which they can be successful. After considering this program and conceptualizations matrix (and considering it, and considering it), I came to the realization that this principle in operation is precisely the reason for my not having become an architect. I will have to come back to this later unless, providentially, time runs out first.

In discussing program variables necessary to permit and support learning, one must begin with the child who is going to learn. All of us in special education have been confronted with the question (and, indeed, again in the Bednar-Haviland position paper), "What's so special about special education?" I believe, and have so answered many times, that the most special thing about special education is that it is truly child-centered. It is education adjusted to each child's instructional level, suited to his individual differences, abilities and needs. Special education is what every child should have.

Willard Olson (1959) includes among developmental tasks for middle and later childhood, which would be equivalent to the years comprised in "transescence":

1. learning the physical skills necessary for ordinary games
2. building wholesome attitudes towards oneself as a growing organism
3. learning to get along with age mates
4. learning an appropriate masculine or feminine social role
5. developing the fundamental skills in reading, writing, and calculating
6. developing concepts necessary for everyday living
7. developing conscience, morality and a scale of values
8. achieving personal independence
9. developing attitudes towards social groups and institutions

(He does not say what kind of attitudes). **The goal of the middle-school would be to provide the setting in which children could grow in these directions to the extent of their own personal capabilities, whatever their handicaps.**

The children found at the "-3 point on the continuum" are more handicapped than most in capabilities necessary to satisfy these goals. These are the educable mentally retarded, the children with learning disabilities, the socially maladjusted, and the emotionally disturbed.

EDUCABLE MENTALLY RETARDED

The educable mentally retarded child has been defined as one who has potentialities for development in minimum educability in the academic subjects of the school; social adjustment to such a point that he can get along independently in the community; and minimum occupational adequacy to such a degree that he can later support himself partially or totally at the adult level (Kirk, 1962). The word "minimum" in this description immediately connotes an adjustment in the school curriculum for the retarded child. In intellectual characteristics, educable mentally retarded children are by definition below average. They achieve I.Q. scores ranging from approximately 50 to 75, showing low performance on both verbal and nonverbal intelligence tests. This rate of development, approximately ½ to ¾ that of a normal child, is manifested also **in retardation in intellectual functions necessary to academic achievement, such as auditory and visual memory, perceptual and conceptual ability, and the ability to generalize.**

The physical characteristics of an educable retarded child may closely approximate those of a normal child, although there may be a higher incidence of physical handicaps and illness among the retarded. Because the great majority of these children, sometimes called "garden variety" or cultural-familial, come from the lower socioeconomic classes, it would be very difficult to determine whether these handicaps are related to the retardations itself or to problems of sanitation, nutrition and health care related to a substandard environment. It has been suggested that the retarded child is also basically like the normal in social traits. Many authorities agree that the secondary characteristics of aggressiveness, low frustration tolerance, self-devaluation, and short attention span are not related to retardation itself, but are rather the outcome of the conflict between the child's ability to perform and what society may expect of him. In terms of occupational characteristics, the educable mentally retarded can learn to perform adequately, at the adult level, as a skilled or semi-skilled worker. A large majority (approximately 80%) adjust adequately to society and become partially or totally self-supporting.

Now let us examine what this all means in terms of curriculum, especially at the levels which would be included in the middle school. Most communities large enough to support a program for the mentally retarded child do have an intermediate class, to which children are assigned who are ten, eleven, twelve and thirteen

years old. Retarded children are usually placed in a special class because the curriculum in the regular class is dependent to such a large extent upon the tool subjects of reading and arithmetic, and especially upon reading. The ten year old educable mentally retarded child has a mental age of from approximately six to eight years. He is ready to learn to read, write, spell and do arithmetic. He needs success experiences educationally and socially, experiences adapted to his ability and interests.

And, we ask ourselves, what is retarded about that? But back to the curriculum! Because of the child's rate of maturation, which is, to repeat ½ to ¾ that of a normal child and which does not accelerate just because he reaches school age, he will not be able to cover what a teacher might expect to be one year's work in one year's time. It will take much longer to learn to read, write and do arithmetic. He must be provided with experiences in these areas which are sequential and developmental, and he must be allowed to progress at his own pace.

In giving consideration to the physical characteristics, it becomes obvious that stress must be placed on health, safety, nutrition, and sanitation. Units of instruction should direct attention to practical experience in development of good health habits. It has been suggested that there is not one area of curriculum that does not offer an opportunity for stressing some aspects of health education. Physical exercise is of utmost importance and games and sports provide a valuable opportunity for socialization experiences as well. It might well be that in the open middle-school that the retarded children could be integrated into the regular school program for physical education, as there is an overlap in physical traits between the normal and the retarded child. It has been suggested that the differences between success and failure of a retarded adult on the job is generally determined by personal and social characteristics rather than the actual ability to do the task assigned. Hence a retarded parts clerk might achieve an "A" in matching numbers and putting things in the right place and flunk out in coffee break, because he does not have the social skills necessary to get along with his fellow workers. Therefore, the curriculum for the retarded child must of necessity place great stress upon social learning. He must be given the opportunity to learn to get along with others.

Another very obvious implication of these characteristics is that the retarded child, being experientially deprived by his rate of development and whose learning style tends to be concrete rather than abstract, requires an experience based curriculum. He does not derive much satisfaction from being told things; he needs to do things, a great variety of things.

LEARNING DISABILITIES

The National Advisory Committee on Handicapped Children has defined learning disability as follows:

> A learning disability refers to one or more significant deficits in essential learning processes requiring special educational techniques for its remediation.
> Children with learning disability generally demonstrate a discrepancy between expected and actual achievement in one or more areas, such as spoken, read, or written language, mathematics, and spatial orientation.
> The learning disability referred to is not primarily the result of sensory, motor, or intellectual, or emotional handicap, or lack of opportunity to learn.

Kirk and Bateman (1962) have a slightly different definition: A learning disability refers to a retardation disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental deprivation, sensory deprivation, or cultural or instructional factors.

It would appear from the above two definitions that one thing we may be relatively sure of, in defining learning disability, is what it is **not** — such as mental retardation, sensory impairment, cultural deprivation, emotional disturbance and the result of poor instruction. Let us then look at characteristics.

The ten most frequently cited characteristics of children with learning disabilities are: hyperactivity, perceptual-motor impairments, emotional lability, general orientation defects, disorders of attention (such as short attention span and distractibility), impulsivity, disorders of memory and thinking, specific learning disabilities in reading, arithmetic, writing, and spelling, disorders of speech and hearing, equivocal neurological signs and electroencephalographic irregularities.

There are, however, as stated by McCarthy (1969), three common elements among all children with learning disabilities:

1. All are retarded or disordered in school subjects, speech or language and/or manifest behavior problems.
2. None are assignable to major categories of exceptionality such as mental retardation or deafness.
3. All have some presumed neurologic basis (cerebral dysfunction) for their manifest disability or disabilities.

It becomes apparent that the diagnosis of cerebral dysfunction can only be presumed by ruling out other causes, through a systematic medical, behavioral, and psychological evaluation.

Most of the programs for children with learning disabilities derive from two orientations — the process approach and the tool subject approach, or, of course, a combination of the two, otherwise known as "eclectic," which, in the educational business, is worth almost as many points as "flexible." The process approach attempts to identify the particular learning process responsible for the defective performance and provide remediation at that level. An example would be the visual-perceptual-motor program, in which are included such activities as rail-walking, patterning exercises, drawing, rhythms, and visual training. An example of the tool subject approach would be a linguistic program, oriented to language learning, for which the classroom would be equipped to stimulate talking, listening, and reading, although physical education may also be provided.

The eclectic method, the combination approach, relies upon extensive diagnosis in both visual-perceptual-motor and tool subject areas, with remediation planned for any areas of deficit.

Quite obviously, attention must be focused in programming for this child upon remediation in the area in which he has a specific disability. Provisions in curriculum must also be made for utilization of specialized personnel such as remedial reading specialists, speech and hearing therapists, psychometrists and psychologists. Behavior modification techniques are utilized for management of behavior problems which may be associated with this disability.

SOCIALLY MALADJUSTED

Socially maladjusted children have been described by Dunn as follows:

> "Chronic juvenile offenders who persistently refuse to meet minimum standards of conduct required in regular schools and classrooms. They defy teachers and disrupt the school program. They intimidate and harass other students. Their behavior is so antagonistic to the purpose and program of schools that they must be excluded from regular class attendance (1964, p. 260)."

We often hear the term "delinquent" used in reference to social maladjustment. It should be stressed that the two terms are not synonymous. Delinquency is a sub-category of social maladjustment, a legal term. Kvaraceus and Miller (1959) have defined delinquency as "behavior by non-adults which violates specific legal norms or norms of a particular societal institution with sufficient frequency and/or seriousness so as to provide a firm basis for legal action against the behaving individual or group." A delinquent is therefore a child who breaks the rules and does it either very often or very seriously. It is very difficult to isolate characteristics indicative of social maladjustment before the children with these characteristics also become delinquent. There are certain clusters of symptoms and casual relationships which could be arranged in three or four general categories:

1. Children designated as explosive, ego-damaged, or un-socialized aggressive, who come out of homes usually described as rejecting, and whose offenses are often accompanied by out pouring of aggression.
2. Children whose delinquency seems to have a purposeless, compulsive quality which expresses, if anything, some type of inner conflict. There seems to be a tendency for these to come from homes in which parents are demanding, restrictive, or vacillating.
3. Children who have "weak consciences" but who form many apparently normal good relationships with their peers. These often come from families in high-delinquency areas who typically do not supervise the children.
4. Children who are capable of self-control and who deliberately manipulate other people — sometimes called the "cool cat" or "confidence man." It is obvious here that we are dealing with still another continuum with children whose illegal acts are frequent and serious at one end and those whose acts are few and minor. Then too, it is a most unusual individual who can reach maturity without ever breaking a law.

Glueck and Glueck, in attempting to discover unique characteristics of the delinquent, compared 500 delinquent and 500 nondelinquent boys, the groups of which were matched in terms of age, general intelligence, ethnic and racial background, and residence in an underprivileged neighborhood. The delinquent was found to differ from the nondelinquent as follows:

1. Physically, in being essentially mesomorphic in constitution (muscular in build).
2. Temperamentally, in being restlessly energetic, impulsive, extroverted, aggressive, destrictive (often sadistic).
3. In attitude, by being hostile, defiant, resentful, suspicious, stubborn, socially assertive, adventurous, unconventional, non-submissive to authority.
4. Psychologically, in tendency to be direct and concrete, rather than symbolic expression, and being less methodical in approach to problems.
5. Socioculturally, in having been reared to a greater extent in homes of little understanding, affection, stability, or moral fibre by parents usually unfit to be effective guides and protectors or desirable sources for emulation (1950).

Kvaraceus, in his Delinquency-Proneness Check List, has listed 18 characteristics which can be observed in school, which include:

1. Shows marked dislike for school
2. Resents school routine and restriction
3. Disinterested in school program
4. Is failing in a number of subjects
5. Has repeated one or more grades
6. Attends special class for retarded pupils
7. Has attended many different schools

One thing that probably should be added here is some suggestion that the child is also male, as the ratio of delinquent boys to girls is approximately five to one.

But, of course, there are also socially maladjusted girls, and of particular pertinence to planning a program for middle-school is the fact that maladjustment usually begins to be apparent at about age thirteen, when the girl enters junior high. Another pertinent fact is that usually the first sign of trouble is the failure to learn to read.

Given the general characteristics of social maladjustment, we then attempt to translate these into something having to do with curriculum.

Stress should be placed in programming for the socially maladjusted on ego-strengthening, or building a positive self-image, by assuring that each child achieves success in learning experiences. Time should be allotted for the use of ancillary services, such as the counselor, social worker, or resource teacher. Nongraded instruction, flexible grouping according to interests and abilities, and remediation in tool subjects are also especially suited to meeting the needs of this child. Emphasis must be placed on communicating appropriately. Opportunities might also be afforded for this child to develop skills in music or physical education, in which he might excel. Work experience programs might be instituted as early as seventh grade, with stress placed upon communication and social skills necessary for success on the job, for as one author states, "For maladjusted youth, the best preparation for work is work itself (Schreiber, p. 283)."

EMOTIONALLY DISTURBED

An emotionally disturbed child is a child who cannot or will not adjust to the socially acceptable norms for behavior and consequently disrupts his own academic progress, the learning efforts of his classmates, and interpersonal relations.

Dunn has defined an emotionally disturbed child as follows:

> A child is emotionally disturbed when his reactions to life situations are so personally unrewarding and so inappropriate as to be unacceptable to his peers and adults (1964, p. 242).

Thus, disturbed children are viewed as having lim-

ited patterns of behavior and lacking flexibility to govern and modify their own behavior. Their behavior differs considerably from others in their circumstances, not by kind but by degree. They are too excitable or too fearful. They are the extremes of any variable of behavior.

In terms of visibility in school, emotionally disturbed children demonstrate one or more of the following characteristics (as listed by Bower):

1. An inability to learn which cannot be explained by intellectual, sensory, or health factors.
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers
3. Inappropriate types of behavior or feelings under normal conditions
4. A general, pervasive mood of unhappiness or depression
5. A tendency to develop illnesses, pains, or fears associated with personal or school problems (1960).

In determining curriculum variables for the emotionally disturbed child, two major dimensions of problem behavior must also be taken into consideration. Children with behavior problems can usually be classified as either a "personality problem" – the withdrawn child, or as a "conduct problem" – the acting-out child. These two types have also been referred to as either externalizing or internalizing. The withdrawn child is most likely to be anxious to internalize. Unpleasant and fear-producting experiences should be minimized. Two good rules to follow in programming for this child are to make learning pleasant and to attempt to guarantee success. The conduct problem types require quite a different educational approach. There are three major dimensions subsumed under this major type. One is unsocialized aggressive or psychopathic, whose behavior is generally annoying and possibly even dangerous. These must learn some impulse control before anything can be done with them, and for these a little fear and avoidance is a good thing.

Definite rules must be established with reward or punishment administered immediately and consistently; physical restraint and isolation may often be necessary; academic material must be presented in a rather repetitious manner. The second type of acting-out child could also be called socially maladjusted and was discussed under that category. The third type is an acting-out child who is also anxious. (They may act like the first type but they are sorry about it.) They are best treated educationally like the withdrawn child.

Educational programming for the emotionally disturbed child relies heavily upon principles of behavior modification and group management. It is also crucial, as in the other areas of serious learning disabilities, to tailor the academic program to the individual needs of the child, as there is a high probability that behavior problems will be accompanied by academic retardation. Individualized remediation in basic academic areas is an absolute necessity.

And again, as in the case of the other serious learning disabilities, time must be allotted for incorporation into the program the skills of the clinical team – the social worker, counselor, psychologist, and other specialists who might be available to assist the classroom teacher.

And speaking of the teacher (which I have intended to do from the very beginning, since my bag is teacher education, and this is the variable in the child's program in which I am personally most vitally interested), many efforts have been made to determine personal characteristics and the competencies most necessary in a teacher for the emotionally disturbed. Among the many listed by various authors are such things as: Objectivity, flexibility, structure, resourcefulness, social reinforcement, curriculum expertise, intellectual capability, a sense of humor, sensitivity, and the like. On an exam last quarter in my Behavior Disorders class, I asked a question about the competencies and characteristics of a good teacher of the disturbed. One graduate student in our Master's program, evidently in an effort to determine whether or not I really read those things, listed many of the proper answers and included, in the middle of the long list, "the ability to walk on water and feed 4,000."

CONCLUSION

In looking again at the Bednar-Haviland matrix, I find it evident that certain of the basic environmental conceptualizations are more critical than others for children with the various exceptionalities. While **space-time identity** might be very important to all children, **consistency** might be of greater importance to the retarded child than to the socially maladjusted who might prefer novelty. A child with a low frustration tolerance might require more **useability** in his physical environment.

Something most of the children at the -3 point on the continuum have in common is a relatively low tolerance level when it comes to teacher talk. Any cues which may be derived from the environment would help eliminate unnecessary conversation and help enable the child to get on with the business of learning. A **therapeutic-level** environment would appear to contain the opportunities for learning and growth for all children from the least to the most able, and the children with serious learning disabilities are those with the greatest need.

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SOME EDUCATIONAL CHARACTERISTICS OF VISUALLY HANDICAPPED CHILDREN WHO MAY ATTEND THE OPEN MIDDLE SCHOOL

Mr. Roger Huff
Research Assistant
American Printing House for the Blind

A visual impairment is characterized by a disfunction of the visual mechanism causing some decrease in the amount of vision one possesses. It is a loss of vision. Generally speaking, we have six broad categories of visual loss:

(1) We may first refer to loss as restriction of visual field.

(2) The loss may be characterized by partial sight which falls within the 20/70 to 20/200 category.

(3) We may have a visual loss which falls between 20/200 and light perception.

(4) We may have light or object perception to total blindness.

(5) We have a use or loss of one or both eyes.

(6) We may also have the loss of a visual perception system.

My comments are directed to the child who may be found in the open middle school. Briefly, let's look at some present trends in the education of the visually handicapped. Recently, a study was compiled by Carson Noland and Joan Bott of the American Printing House for the Blind. The children in this study are legally blind. The figures used are taken from the federal quota registration over a three-year period from 1966 to 1969.

(1) More blind children are presently educated in public day school programs than in residential schools. In 1966, 10,000 legally blind children were educated in public schools. In 1969, 12,049 were educated in public schools, which shows an increase of 11%. In 1966, 6,886 children were educated in residential schools. In 1969, 6,722 children were educated in residential schools, showing a loss of 2%.

(2) Multihandicapped programs in residential schools increased in enrollment by 29%.

(3) Fewer visually handicapped children read Braille than ever before. In 1966, approximately 46% of the legally blind population read Braille. In 1969, only 39% of that population read Braille.

(4) The general trend continues to be toward increased use of residual vision; sight utilization. Large print users remained static over the three-year period, while ink print users have increased.

(5) The numbers of students categorized as ungraded are still increasing at a rate of about 50% over each three-year period.

(6) We are also in the process of designing multimedia study systems generally known as oral study systems which may be used assisting in the education of the visually handicapped.

Now, how are these trends affecting the education of the visually handicapped? Or more specifically, how do they relate to the learning problems or disabilities of the visually handicapped child in the open middle school?

First, let's look at the partially seeing child. If you will remember, when I referred to our categories of visual loss, I indicated that a child who has a visual acuity between 20/70 and 20/200 is classified as partially sighted. A study in 1966 by Birch Tisdall, Peabody and Sterrett on School Achievement and Effect of Type Size on Reading in Visually Handicapped Children has given some very interesting facts in relation to the typical partially seeing child. The study was conducted on 1,084 fifth and sixth grade partially seeing students from twelve states and four additional cities. Compared to sixth graders in general, the partially seeing child is one year and nine months over age for grade placement. He is in a special class or resource room. He has been enrolled for almost five and a half years in special education. His visual acuity is somewhere between 20/70 and 20/200. He has no other significant educational handicap, but if he did, the teacher would most likely judge it to be an emotional problem. He reads type size from 12 to 24 point. His overall grade achievement is between 5.6 and 5.7. His academic weaknesses are in science, social studies, and language. His highest achievement is in arithmetic computation. He has average intelligence, educationally, his most important feature is under achievement. In general, with average intelligence, a child of twelve years nine months should be in the seventh or beginning the eighth grade.

Grade achievement of 5.4 for the partially seeing child indicates that this child is approximately two and one half years academically retarded.

Now, what kind of remediation can we expect to administer in order to help overcome these deficits? The authors of this study indicate several approaches. Realizing the child is over-age for grade placement and under achieving, we must have a stronger pre-school identification program to identify visual impairments which may cause educational deficiencies. The teacher must know more about the nature of the visual disability and how it affects the educational progress of the child. We must teach the child to use his vision when he enters school. Possibly, low vision aids may be a particular help in this respect. We must also develop higher expectancy levels than we have had in the past in relation to the education achievement of this child. Instruction should be aimed at improving study habits and we must also try to achieve increased reading rates and comprehension. So, in relation to the partially seeing child, we are seeing a disfunction of a perceptual system characterized by a visual impairment. The visual acuity ranges from 20/70 to 20/200. The child is over-age for grade placement, he has average intelligence, he is approximately two and one half years academically retarded, and he may have an emotional problem He needs extra study time, his weak subjects are science, social studies, and language, and he reads at a slower rate; therefore, we must work on his study habits, use of remaining vision, assistance with optical aids and teacher expectancy.

To embellish somewhat on the remediation procedures for the partially seeing child, I might add a few comments about a study by Natalie Barraga on Increased Visual Behavior in Low Vision Children. It was conducted in 1964. The subjects in this study were low vision children whose visual acuity was 20/200 or less. The study demonstrated that a short term intensive teaching procedure on the use of remaining vision would increase significantly the visual efficiency of low vision children. It also revealed the need for continuous comprehensive appraisal of each child and his efficiency in all learning media before deciding that visual materials are unsuitable for use in the classroom. It further indicated that teachers would be wise to use more visual materials to supplement tactual and auditory media in study and instructional phases of the educational program.

Now, let's shift gears for a second and take a look at the blind child. B. Lowenfeld has indicated that there are only two factors which are "Sui Generis" to blindness which is concept formation and mobility and orientation. By this, I mean that the two problems which are caused by blindness are concept formation and mobility and orientation. Here again, when we are referring to a blind child, we must think of a visual and possibly a perceptual disfunction; loss of vision and in relation to the blind child, the tactile and auditory senses are used to supplement the amount of information the child perceives from his environment. Since school achievement and school success are often measured in relation to the child's ability to read, I thought it would be interesting to give you some information in relation to Perceptual Factors in Braille Word Recognition which was written by Nolan and Kederis.

Prior to this study, the whole work approach was used in teaching Braille reading. This study found reading instruction basically follows the vogue technique of the time. The unit of recognition is the Braille cell. Recognition of Braille words requires from 16 to 196% more time than the times required to recognize the individual characters included.

Growth of basic ability in tactual discrimination is still underway at the fourth grade. Since we know that blind children are still developing tactually by the fourth grade and that some have trouble with the reading process in the elementary grades, could we not speculate that we might have a dyslexic blind child who has trouble reading because the tactile perceptual system is reading that we are not fully developed in the early elementary grades. We have a slow developing perceptual system, a problem with reading the the end result is an educational deficit.

So, how do we remediate for such a problem? Well, the American Printing House for the Blind is in the process of developing what they refer to as an aural study system. They have conducted studies in listening to determine the conditions under which a child most efficiently listens and most efficiently learns through the use of reading or tactual apparatus. They have also determined degrees of learning difficulty in subject matter areas; science being more difficult to learn than social studies. To help the child learn, they have developed a combination of learning approaches which involve listening materials, tactual apparatus, reading, and the hardware that is necessary in using such a study system. For instance, if a child was learning a science lesson and he happened to be a Braille reader, he might first **listen** to a general overview of the lesson then go back and **read** more important technical aspects of the lesson in Braille, from there he may use tactual apparatus to conduct an experiment in relation to the lesson he is learning. Thus, a more comprehensive study system is used to extract the information that is necessary to comprehend the lesson.

Finally, we must add a few words about the changing population of our visually handicapped children. As you all know, in the early sixties, we had a rubella epidemic and a lot of children were born that have multiple handicaps. Very shortly, these children will be arriving on the school scene and we will be planning programs to fit their needs. Here again, this is going to require a comprehensive and intensive look at the way we teach subject matter if we are going to be of any help to these children.

So, briefly, in looking at the visually handicapped child, we can generally say that this child is usually over-age for grade placement, the child may be from two to four years academically retarded. We have a disfunction of the visual mechanism which may cause a perceptual problem in other than the visual sense. We have a change in the population of the children which has implications for the methodology that we are using in the educational process.

The field of vision, in general, will soon be addressing itself to the problem of visual perception as well as the problem of visual impairment.

ADVANTAGES AND DISADVANTAGES OF THE OPEN SPACE SCHOOL FOR THE HARD OF HEARING STUDENT

Mrs. Patsy Day
Hearing Clinician
Brevard County

In the past school year (1969-70), I have worked with one severely hard of hearing and one moderately hard of hearing student in an open space school situation. These students were taken from the classroom three times a week for a forty-five minute therapy session. The following is a summary of the advantages and disadvantages I have observed for the hard of hearing student in the open space school.

ADVANTAGES

1. Attitudes and approach of teachers.
   The general attitude and team-teaching approach of the teachers in the open space school was very helpful to me in being able to aid the student in all areas of his educational program. The teachers in this particular situation have a better over-all view of the individual student. The actual physical set-up, with all the students (about 100) in one complex, lends itself to this type of approach. This is extremely helpful in setting up a hearing therapy program for the student.
2. Flexibility of scheduling.
   Scheduling for therapy time was very easy and any classroom time missed was made up. Student schedules were easily adjusted around therapy time.
3. More individualized instructional program for the hard of hearing student.
   This therapist felt that in the open space school situations, the teachers were able to individualize programs far more than in the traditional setting. Even with the large number of students in the complex, emphasis is placed on the individual working on his own level at his own pace.
4. Extensive use of modern audio visual aids.
   Many times the students work independently and many audio-visual aids help reinforce learning of basic concepts in math, language, social studies, etc. Many of the aids are excellent for the hard of hearing student who doesn't "catch on" or understand the first time a concept is presented. As is well known, the hard of hearing students need reinforcement upon reinforcement.

DISADVANTAGES

1. Extensive use of tape recorded material.
   The severely hard of hearing student was unable to use most of the tape recorded material. However, by the last three months of school, she was able to use some of the simple exercises on tape. This was really very good auditory training and the student felt very pleased about her accomplishment. For the moderately hard of hearing student, this was only a slight disadvantage. With a little extra help and guidance, he was able to use recorded material.
2. Physical situation making it difficult for the hard of hearing student to always be near the source of sound.

   Perhaps the actual physical situation in the open space school is the greatest disadvantage. There is really no front or back, but primarily centers of attention. Thus, the hard of hearing student must acquire an "extra sense" so that he knows where and when the action is. This requires a great deal of movement in the large complex area so that he is sure to be close to the source of sound at all times. However, if the child has been exposed to this open-space situation from the beginning of his school career, he adjusts to this easily. The therapist has found it important to help the child to develop an independence about his movement about the complex. He must accept the responsibility of being where he can see and hear. These students may be shy about this at first, but they can learn that they must take the responsibility or be lost in the shuffle. With so many students moving about, the teachers cannot always see that the one hard of hearing student is seated in the proper place.

As can be seen by the list above, this therapist feels that the advantages far outweigh the disadvantages. Working in the open space school this year has been very challenging. I am sure that only a small portion of the advantages were noted by this therapist.

Some work was done on audio-visual tape. It is felt that this media can be used in many areas of hearing therapy. Several tapes were made primarily for lip-reading practice and could be used for independent work for the hard of hearing when the therapist is not at the school.

The open space school opens a whole new area in which new and better methods of hearing therapy can be developed.

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